

The New I-64 Economic and Regional Mobility Study

Annual Report 2008

Jan 2008- Dec 2008



Heartland Market Research

For Missouri Department of Transportation

Before the Closure						
Times indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.						
	Altoona to Harrisburg 2.5 to 3.5 hours	Altoona to Scranton 1.5 to 2 hours	Scranton to Harrisburg 1.5 to 2 hours	Harrisburg to Scranton 1.5 to 2 hours	Scranton to Altoona 1.5 to 2 hours	Harrisburg to Altoona 2.5 to 3.5 hours
Traveling	☐	☐	☐	☐	☐	☐
Shopping at your favorite	☐	☐	☐	☐	☐	☐
Medical treatment	☐	☐	☐	☐	☐	☐
Studying at your favorite library	☐	☐	☐	☐	☐	☐
Traveling through St. Louis Bridge	☐	☐	☐	☐	☐	☐



Final Report

**The New I-64 Economic and Regional Mobility Study
2008 Annual Report**

Prepared for
Missouri Department of Transportation
Organizational Results

by

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The opinions, findings, and conclusions expressed in this publication are those of the principal investigators. They are not necessarily those of the Missouri Department of Transportation, the U.S. Department of Transportation or the Federal Highway Administration. This report does not constitute a standard or regulation.

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Executive Summary

The research team has found the following results on the four key study areas:

Communications

The Western closure in 2008 had a noticeable impact on respondent behavior and travel habits.

- Sizeable minority reported changes in their shopping and driving habits
- Many respondents reported slightly longer daily commutes compared to pre-construction period
- Majority of respondents are satisfied with how they are able to get around St. Louis
- Overwhelming majority of respondents are satisfied with MoDOT's decision to close parts of I-64 for two years instead of taking 6-8 years with lane closures (76.5% in the lowest measurement, 93.8% in the highest)
- Overall, the respondents have high level of satisfaction with how the I-64 closure has been handled (77% to 88%)
- Very satisfied/satisfied is the overwhelming majority responses received when asked about the delivery of accurate and understandable project information (89% to 95%)

Considering the reported changes in respondents' behavior, these are extremely high levels of satisfaction and reflect the public consensus that this project was well planned and is being well managed.

Mobility

Approximately 140,000 to 150,000 vehicles daily used the segment of I-64 between Ballas Road and I-170 before its January 2, 2008, closure. Assessments on how these daily trips were served or reduced in 2008 are listed in the bullets below:

- Traveled along the adjacent roadway network
- Switched to Metrobus and/or MetroLink
- Took advantage of RideShare and/or carpooling opportunities
- Reduced vehicle trips and/or combined several trips into a single trip
- Major companies allowed working from branch or satellite offices not impacted
- A small percentage even moved and/or switched jobs

Based on the traffic information collected, there were increases along I-270, I-44, I-170, I-70 with I-270 and I-44 experiencing the greatest increases (24,000 to 40,000 vehicles or 17 to 21% increase). Parallel arterial routes also experienced significant increases in traffic volume as well as travel time.

East-west arterial corridors, such as Clayton Road and Ladue Road, realized increases of between 10,000 and 20,000 vehicles per day. North-south arterial corridors such as Hanley Road and Lindbergh Boulevard experienced a slight increase in traffic volumes and travel times.

Travel speeds have dropped slightly in conjunction with increases in traffic volumes mentioned above on alternate routes. This has lead to increased travel times along some of the region's freeway network. It should be noted that the increase was not as high as some would have expected due to some of the pre-closure capacity improvements. The range of increase travel

times on some segments of alternate designated routes (like I-44, I-70 and I-270) were between 1 to 8 percent. When compared with increase traffic volumes ranging from 4 to 21%, travel times were slightly better than what would be expected.

Transit usage varied significantly from 2007 to 2008 on a month-by-month basis. MetroBus ridership varied from an 8.33% month drop when comparing March 2007 to March 2008 to a 13.1% increase when comparing February 2007 to February 2008. MetroLink ridership varied from a 4.45% drop when comparing August 2007 to August 2008 to a 31.9% increase when comparing July 2007 to July 2008. Overall, MetroBus ridership experienced an increase of 5.52%, while MetroLink ridership experienced a 5.23% increase between 2007 and 2008.

The RideFinders Rideshare program experienced a significant increase through 2008 as it approached the 10,000 membership plateau in November. Carpool and vanpool programs had membership increases near 40 percent and 10 percent respectively over the previous year. Gas prices, regional and national economic impacts, and regional construction activities appear to be the strongest reasons for these increases.

Usage of commuter park-and-ride facilities in Missouri was up 22% in August 2008 to 1913 parking spots used. It was noticed that park-and-ride facilities served by transit were better utilized, showing that the intermodal connection had some impact on how people traveled.

Crash Analysis

The study team evaluated 5-year (2004-2008) of crashes data that occurred on 16 different roadways in the vicinity of the I-64 closure. Using the data set, 1-year (i.e., 2008) post-closure crashes are compared to 4-year (2004-2007) pre-closure crashes in various ways. The major findings from the crash analysis are as follow:

- Comparing year 2007 to year 2008, crash rates on most routes either decrease or remain about same except for six routes that increase slightly as follows: I-70(4%), I-55 (6%), MO 366 (4%), MO100 (8%), MO115 (6%) and MO Route D (3%). However, only I-70's 2008 crash rate was noticeably higher (15%) than the base year 2004 with the remaining five routes having 2008 crash rates that were the same or below the base year 2004 crash rate.
- We have tentatively concluded that the crash increase on I-70 in 2008 was partly due to the record breaking heavy rain in 2008. An increasing trend of the out-of-control crashes was noticed and the study team will be further analyzing it as we review 2009 crash data.
- In cases of MO100 or I-70, the increasing trend started before the I-64 closure (i.e., before 2008). So, it is hard to infer whether the I-64 closure caused the crashes to increase, and we will monitor them as we review 2009 and 2010.
- Although each route shows its own trend, the overall crashes on all three types of highways (i.e., interstate, MO, and US highways) have decreased in 2008.
- The observational inspections conducted in this study leads us to a tentative conclusion that there is no strong evidence proving that I-64 closure contributed to the crash increase on the highways that are potentially influenced by the closure. Continuation of this crash

analysis through 2009 and 2010 will provide additional information that will either confirm the tentative conclusion or provide information that changes this initial conclusion.

Economics

Since the housing and credit crisis emerged, national economic conditions have been in decline as economic activity has been weakening across most industry sectors and metropolitan regions in the US. Gross Domestic Product (GDP) fell 6.3 percent for the fourth quarter 2008 with exports, housing, and business investment continuing to decline. The residential and commercial real estate markets are deteriorating in conjunction with the construction industry. In addition, lending activity has declined. The weakening conditions have impacted the labor market as unemployment levels rose throughout 2008.

The St. Louis area is following the similar national trend and the challenge in this study is the separation of the impacts: national/regional recession and the I-64 construction project. The evaluation of some indicators (like employment and sales) showed that the economy measurements along the I-64 corridor are fairing better than the non-corridor economy measurements.

Information gathered through two business surveys and continuing dialogue with key business areas along the I-64 corridor confirmed that the national/region recession impacts had a significantly greater impact on the region's overall economy. A very high percentage of very satisfied/satisfied response was received from the business community surveyed when asked on how the project is being delivered and managed.

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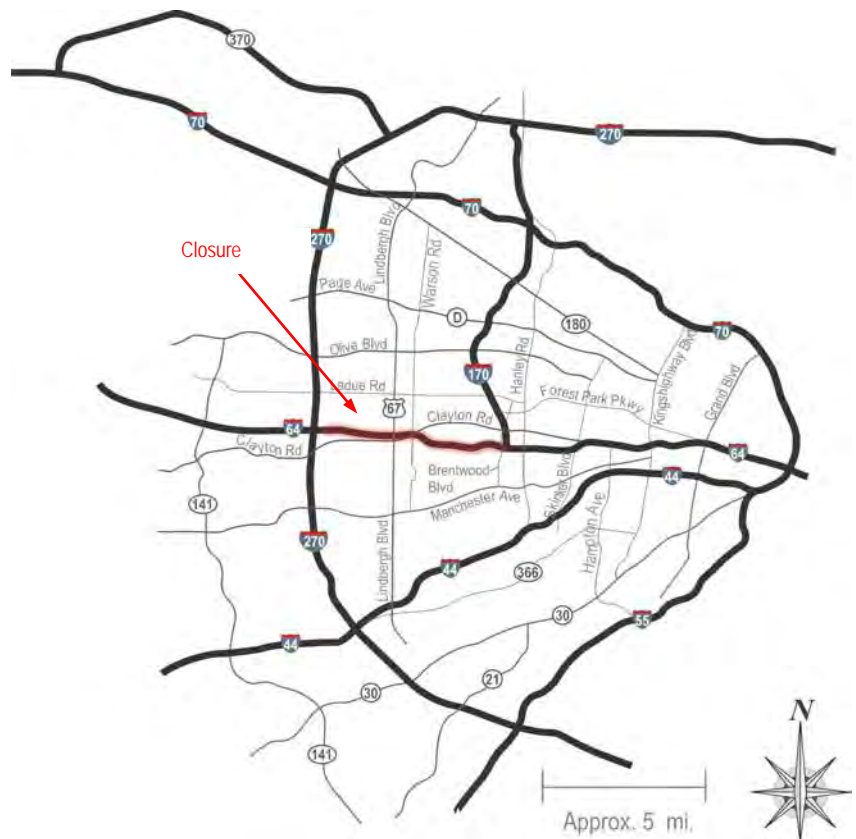
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Introduction

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (map shows general closure area) was completely closed for construction. The closure lasted through the end of 2008, at which time a section to the east was closed for construction for the bulk of 2009.

This annual report for 2008 assesses the first twelve months that closely corresponds to the time period of the western closure. This report evaluates the four key areas of **Communications** (MoDOT's provision of information to the public, and the public's response to the project), **Mobility** (the effects of the closure/project on travel behavior, choices, and flow), **Economics** (the effects of the closure/project on businesses within the corridor as well as the economic health of the region) and a **Traffic Crash Analysis** (the effects of the closure/project on the region's transportation safety). This report is the culmination of monthly and quarterly reports produced in 2008. This 2008 report and a similar 2009 annual report along with the one-year post-construction assessment report will be included in the final report in mid-year 2011.



Objectives

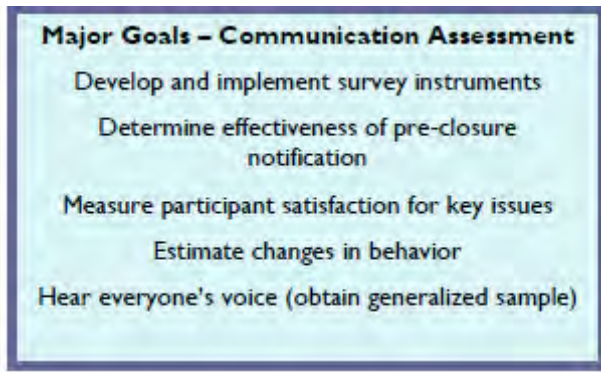
Assess potential impacts in the following areas to provide information on how the I-64 full closure construction influenced regional activities:

- Communications
- Regional Mobility
- Roadway Safety
- Regional Economics

Present Conditions

Full-closure is a roadway construction strategy that has been considered when regional conditions exist where alternative roadways are available. This strategy permits construction to be accelerated and normally at a reduce construction cost. The major concern in implementing this strategy is the public concerns on impacts to region mobility, economics and safety.

Results and Discussion (Evaluation)



Communications Discussion

Survey Methods and Characteristics

Over 5,000 people were surveyed in 2008 to measure their opinions about the Western closure and how it may have changed their behavior. Three survey methodologies were utilized in this study. Detailed survey instruments were designed specifically for this project (two online surveys, a mailed survey and in-person interviews). Two key questions were also added to the motorist assist and I-64 Traffic Response surveys distributed by MoDOT operators after providing traffic assistance to motorists in need.

On-Line Survey

Below are some statistics regarding the on-line survey on MoDOT's the New I-64 website:

- 1,362 responses were generated during the Western closure (1,040 responses on the first survey and 322 responses to revised second survey after June 1, 2008).
- 1,257 of these responses (92%) were by first-time visitors to the survey.
- On-line respondents tended to be Caucasian and affluent.

Mailed Survey

Ten thousand St. Louis residents were randomly selected and mailed surveys in January 2009. Since the list of 10,000 residents was randomly selected from multiple St. Louis area zip codes, this method provided the most representative sample of the area. The intent to increase minority participation to ensure a diverse study was accomplished with this mailed survey instrument.

- 776 responses were received
- Response rate was 7.76%
- African American participation was 16.3%

Motorist Assist Surveys

Motorist Assist respondents tended to be less affluent than most respondents. People in this income bracket are less likely to respond to mail surveys and online surveys, so two key questions were added to the standard surveys already distributed by motorist assist operators to ensure that the most important questions were asked of the lower income segment.

- 3,472 responses were received
- 2,764 through MoDOT's Motorist Assist program (freeways)
- 708 through the I-64 Traffic Response program (arterials)

Interviews

Three separate in-person interviews were conducted during 2008 to confirm consistency in respond between other survey instruments and to help measure impacts to the community. The first public interview was conducted at major shopping center and major supermarket located adjacent to the western closure. The second in-person interview was conducted with local, state and federal officials. The third in-person interview was conducted at the St. Louis Zoo in Forest Park. The following provides a summary of those interviewed:

- First survey - 100 participants at the Galleria Mall and Schnucks Supermarket
- Second survey – pubic officials from 3 cities, county and US Representative office
- Third survey – 80 participants at the Zoo (Forest Park) – 56 local citizens and 24 visitors

Survey Evaluation Methodology

The following seven (7) evaluation areas were developed to categorize the survey information gained and received from the various survey methods described above. The following defines the intent of the categorized evaluation area and the general overall results discovered:

“Awareness” defines how informed transportation users are with regard to the closure and other project construction activities that impact their normal travel patterns and region’s economy. From the responses, it appears that MoDOT effectively communicated the closure to the affected population in 2007; pre-closure awareness was reported as very high. These responses have also reported that scheduled construction activities that impact travel have been effectively communicated.

“Satisfaction” defines how satisfied transportation users are with regard to the management of the construction project and travel in and around the St. Louis region. Respondents are largely satisfied with their ability to travel around the region. They also largely satisfied with project management that includes areas like the full closure approach, the level of information shared on project activities, and the project communication shared through various outlets.

“Information Sources” defines the various outlet sources that project information is shared and what are the most effective sources to get information to the transportation user. TV News appears to be the best way to reach the majority of the respondents, with radio news, road signs and newspaper also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a large portion of the general population does not obtain their information via the internet and these other methods should continue to be used to reach them.

“Alternative Routes” defines the designated and other alternate routes used by the transportation user to travel around the construction project. I-44 was the most recommended alternative route. Two nearby parallel arterials, Ladue Road and Clayton Road, received more negative responses when survey respondents were asked to make recommendations on preferred alternative routes.

“Travel Time” defines respondents’ perception on how their travel times were impacted by the construction project. The majority of respondents are indicating that that their travel time for basic trips have increased; although many have indicated no change or even a few reported an improvement in travel times.

“Travel Mode” defines changes in transportation modes like use of transit or non-motorized transport (bike or walking) to accommodate their trips (commute, event/entertainment, shopping, etc.). Initial responses on how the closure has changed people’s mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been and continues to be by the automobile.

“Personal Impact” defines how the construction project has impacted their trips in the region. The closure is affecting people’s trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping and eating out. Overall, almost three quarters of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Most commuters have reported not shifting their normal commute time.

To date, the responses have been fairly consistent over the various survey methods. This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population. Other than issues related to access to the online survey that is not available to all transportation users for various reasons, the web-based survey instrument may present skewed information. The selection of a target area with the mailed survey to help ensure greater diverse survey participation and to counter potential web-based survey impacts was utilized.

In order to facilitate better comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the “not sure” or “no opinion” percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Awareness

The survey results indicate that the public was very aware of the closure well before it occurred. 98.1 percent of the on-line respondents were aware of the upcoming closure in 2007, and since 97.2 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information.

Satisfaction

The charts at right summarize survey respondents’ opinions in the area of satisfaction. As the graphs indicate, 66 percent or more of the respondents

Response	Online	Mailed
Never	2.8%	9.4%
Rarely	34.9%	33.6%
Most days	62.3%	57.1%

Knowledge of Closure (Web Only)

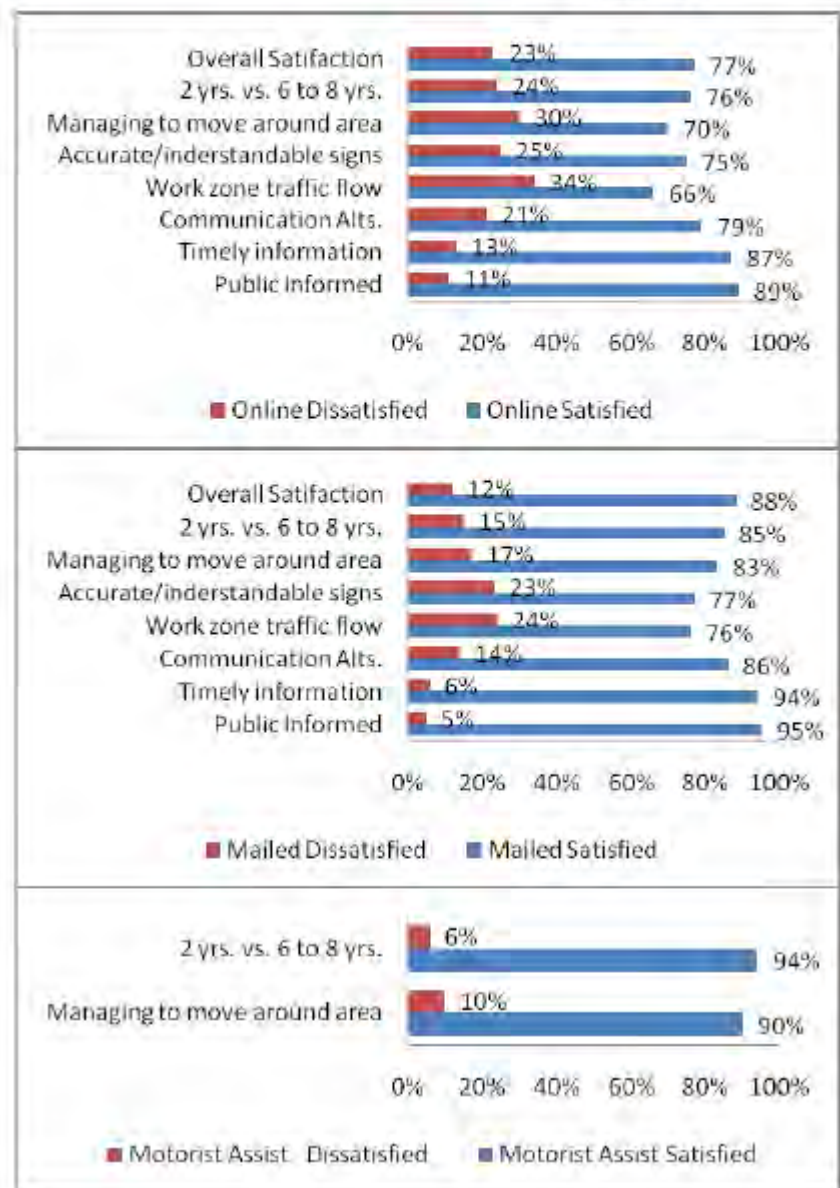
Aware of closure before survey: 98 %

Learned about closure:

Before Dec '07 94 %

Dec '07 4 %

Jan '08 2 %

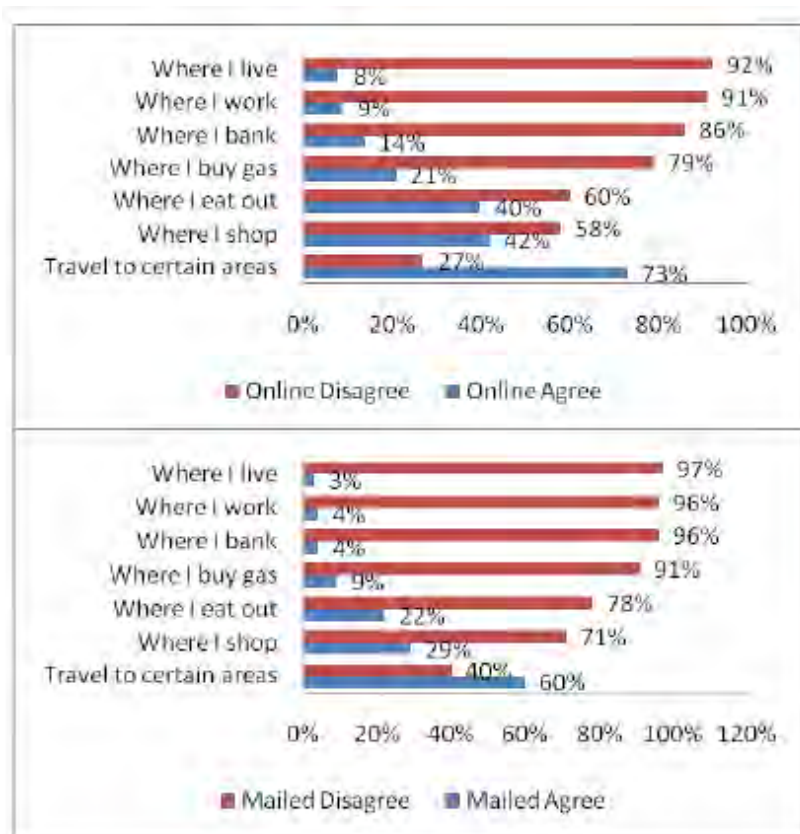


expressed satisfaction in response to each question in each forum, and responses were fairly consistent across the different survey types.

Satisfaction was highest with “how well the public has been kept informed” (89 to 95 percent) and “the timeliness of information” (87 to 94 percent). The least amount of satisfaction was expressed for “how traffic is flowing in work zones” (66 to 76 percent) and “accuracy and understandability of construction zone signs” (75 to 77 percent).

The two survey questions for the motorist assist and I-64 traffic response programs showed a slightly higher satisfaction. This may indicate that those receiving service patrol assistance responded in a more positive manner of appreciation. This indication is another acknowledgement that these programs are well appreciated by transportation users.

Based on in-person interview surveys that were recently conducted at two shopping locations near the closed section of I-64 and the Zoo in Forest Park, it appears they are generally in agreement with the above results. For most measures, over 80 percent of the interview respondents were either satisfied or very satisfied. This included opinions regarding both the decision to close I-64 and overall satisfaction with how the I-64 closure has been handled.



Note that written responses to the surveys are still being processed, but one notable item is that respondents have expressed satisfaction regarding the regional collaboration on signal timing that has facilitated arterial flow during construction; the public has also expressed a desire to see these timing improvements continued after the project is complete.

Personal Impact of the Closure

The questions on how the I-64 construction and the full closure impacted regional travel will help in measuring and confirming potential travel and economic impacts. As the graphs at right indicate, respondents much more often modified their frequency of travel to certain areas than

Spatial/Temporal Effect on Job			Typical Period of Commute (or Other Travel) Web only		
	Mail	Web		before	after
Same hours, same location	73 %	65 %	before 7 am	20 %	27 %
Shifted hours	8 %	22 %	7 - 9 am	41 %	39 %
Shift location more often	3 %	6 %	9 am - 3 pm	10 %	15 %
Quit job	1 %	3 %	3 - 6 pm	37 %	43 %
			after 6 pm	12 %	17 %

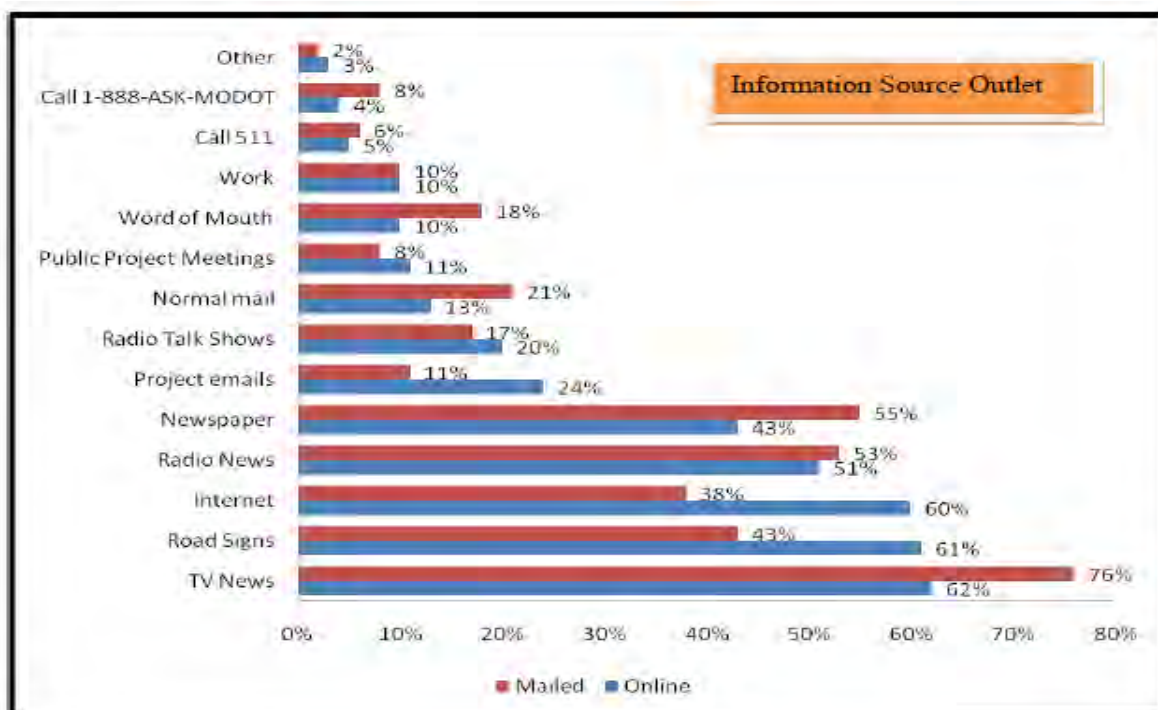
the location of their basic trip destinations. The most affected destinations were shopping (29 to 42 percent) and eating out (22 to 40 percent). While personal impacts to where someone lives, works or banks, were reported in surveys showing lesser impacts.

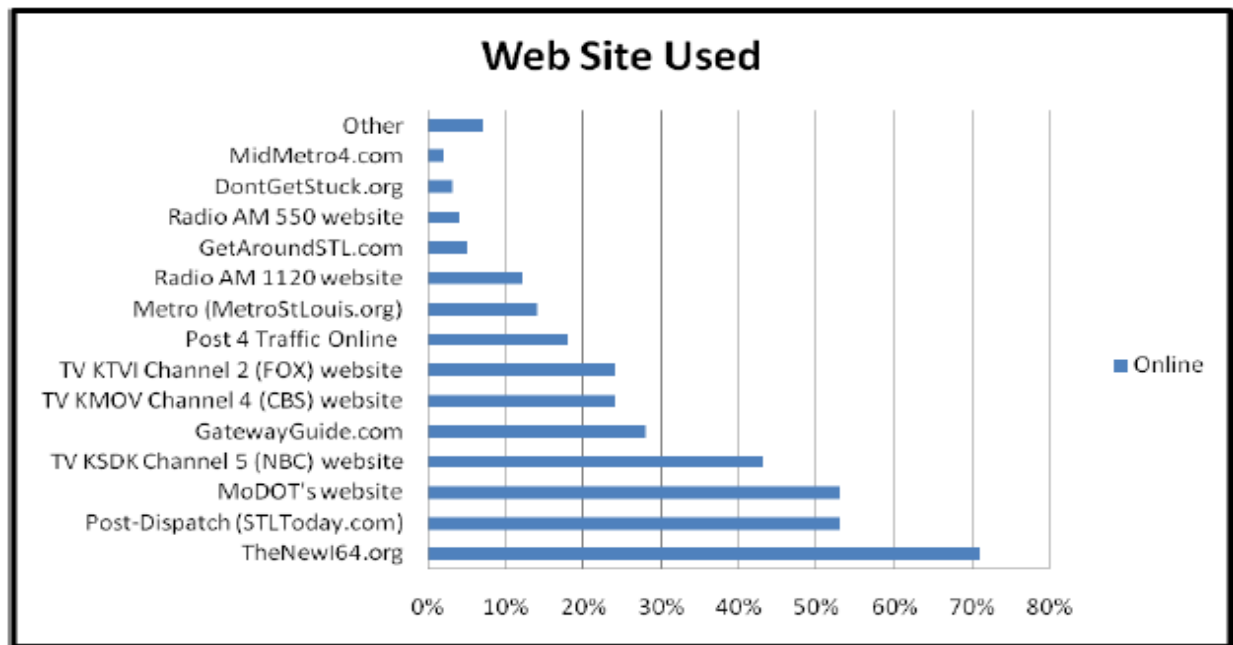
Most respondents indicated that they have continued to work the same hours in the same location since the closure. The online respondents, including residents more distant from the closure than the mailed survey, were much more likely to have shifted hours in response to the closure compared to those who completed the mailed survey.

The web survey revealed a stated shift to earlier morning commute/travel hours, but no significant shift in the evening hours. It should be noted that anecdotal information, and other observations, indicate that this shift was high initially, but has lessened over time as conditions begin to stabilize. The high number of web survey responses in the early weeks of the closure may therefore skew this data; future reports will further examine time trends to explore this effect.

Information Sources and Communication Methods

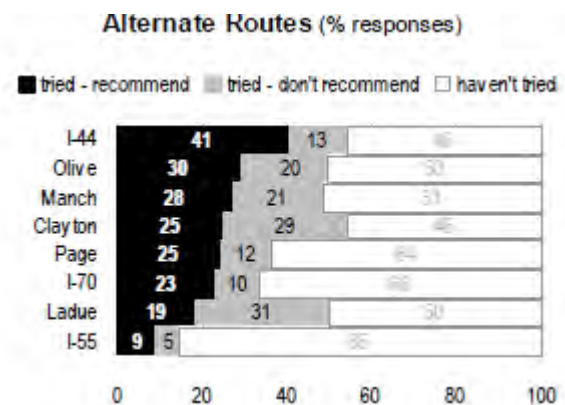
TV News was considered to be the best method for MoDOT to distribute information to the public by the respondents of both the online and mailed surveys. As expected, there was much variance in the perceived effectiveness of internet communications between the two survey types. Online respondents with access to the internet thought the internet was the second best way for MoDOT to provide information to them. However, those who returned the mailed surveys were not as likely to use the internet to obtain their information (only 38 percent of these respondents thought the internet was a good way for MoDOT to provide them with information). Road signs, radio news and newspapers were also considered very good methods of communication.





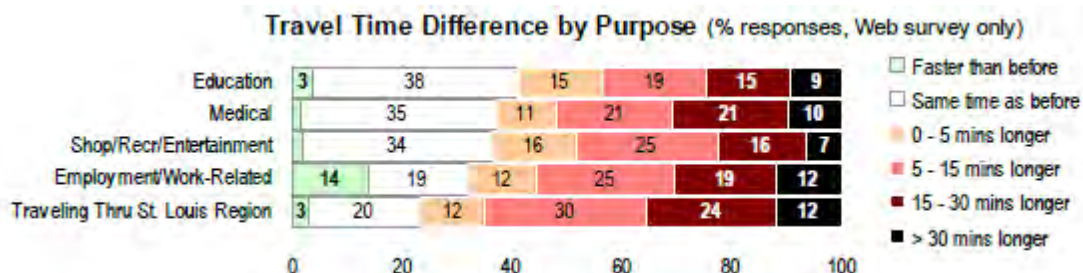
Alternative Routes

Respondents were also asked to provide input about eight alternative routes. This question has been asked in the first online survey that was conducted through June 1, 2008. I-44 was the most recommended route, with 41 percent of the respondents recommending it. Clayton Road and Ladue Road were the least recommended routes, in the sense that more respondents recommended against their usage than for them.

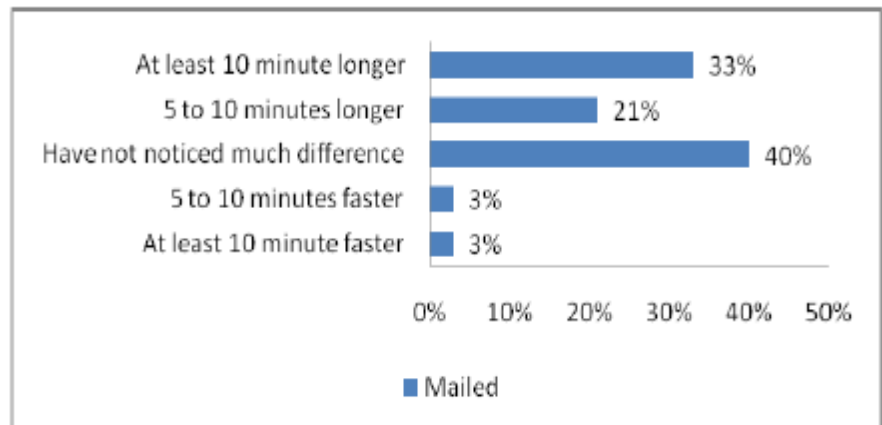


Travel Time

As indicated by the graph below, the majority of Web survey respondents (58 to 78 percent) indicated that various trips had gotten longer since the closure, with a total of 9 to 12 percent responding that their trips had increased by 30 minutes or more. Notably, when asked specifically about work trips, 14 percent of respondents indicated that their work trips were actually faster than before.

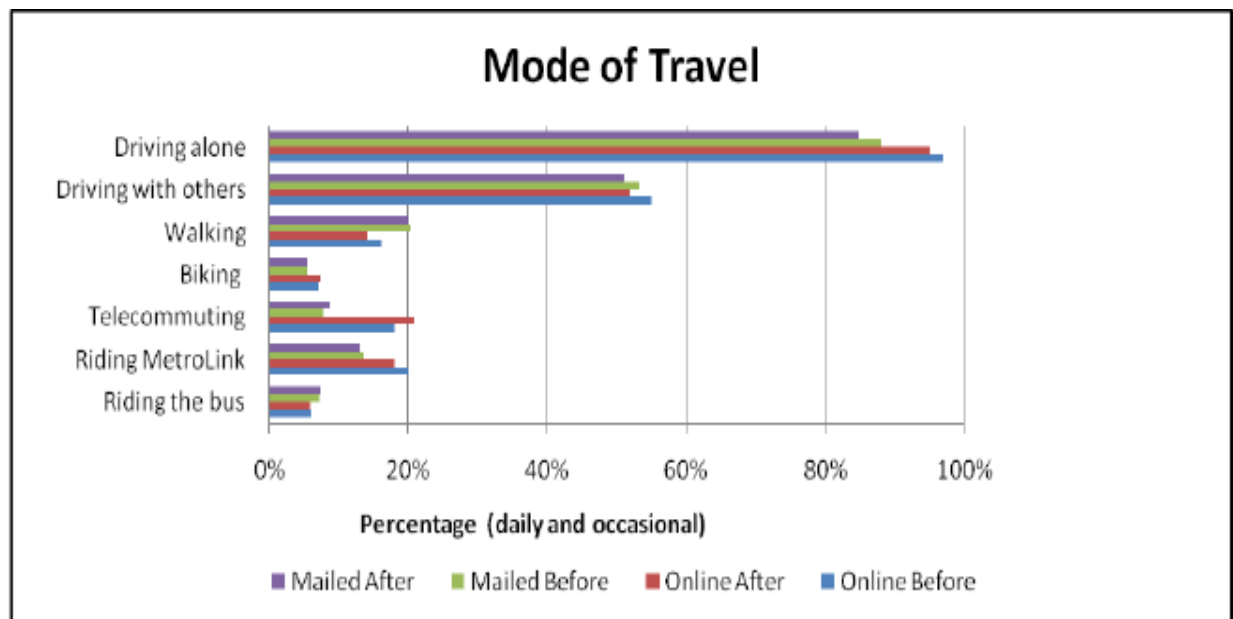


In the mailed survey, the question regarding the time difference between pre-closure trips and after closure trips was asked. Fifty-four (54) percent responding reported taking longer to complete their trip, while 40% did notice much difference in their trip times. The graph to the right indicates the results of the mailed survey.



Travel Modes

To date, the surveys have revealed only slight changes in reported travel mode since the closure, as illustrated below. Single-occupant driving has apparently slightly decreased by 2 to 3 percent, and carpooling also appears to have decreased. For other modes, the fluctuations are not stark, but there appears to have been some increase in each. The study team will continue monitor these indicates in 2009 to see if there is any difference between the west and east closure. With the east closure occurring near Forest Park, there maybe a shift based on the park serving as recreational and entertainment locations.



Demographics

The table at right summarizes the responses to demographic questions from the respective surveys. One of the purposes of supplementing the Web survey with a mail survey was to reach populations without internet access, in order to ensure the research considered the input of as many groups as possible – a representative sample. By targeting the mail survey at many of the zip codes near the closure, the research team succeeded in its objective of reaching a more diverse population, especially in reaching more minorities and more females.

Demographics of Survey Respondents

Age			Gender		
	Mail	Web		Mail	Web
under 25	4 %	11 %	Male	42 %	54 %
26 to 40	21 %	38 %	Female	58 %	46 %
41 to 65	56 %	49 %			
Over 65	19 %	2 %			
Race			Income		
	Mail	Web		Mail	Web
American Indian	2 %	1 %	Less than \$20,000	-	2 %
Asian	1 %	3 %	\$20,000 to \$40,000	-	12 %
Black/African-American	16 %	2 %	\$40,001 to \$60,000	-	17 %
Hispanic/Latino	1 %	1 %	\$60,001 to \$90,000	-	21 %
White/Caucasian	78 %	91 %	\$90,001 to \$120,000	-	22 %
Other	2 %	2 %	\$120,001 to \$150,000	-	10 %
			\$150,001 to \$200,000	-	9 %
			More than \$200,000	-	7 %

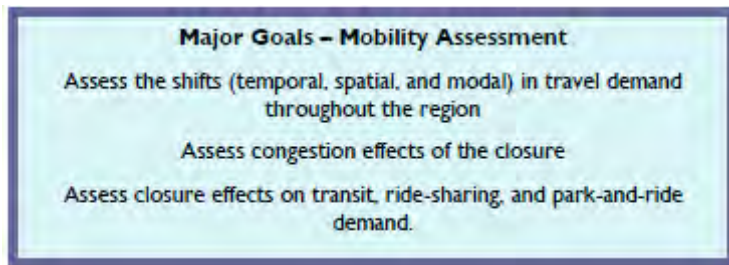
Mobility Discussion

The focus of this annual report is to highlight some of the key findings and trends during the 2008 closure and construction of the western section of I-64, from Ballas Road to I-170. An extensive amount of data was collected by a variety of agencies regarding the region's transportation network. Information about the region's roadways, mainly consisting of traffic volume and travel time data, was extensive. This annual report is intended to provide a brief overview of the changes along the region's roadway network during the western closure. Discussions related to changes to transit ridership, RideFinders, commuter parking lot usage, crash information and other significant data related to the region's mobility have also been included in this report. From a process standpoint, the study team collected available mobility data and, when possible, developed automated methods to assist in the collection, processing, and display of the enormous stream of mobility-related data. Key initial findings are listed below:

- Approximately 140,000 to 150,000 vehicles daily used the segment of I-64 between Ballas Road and I-170 before its January 2, 2008, closure. Volumes on I-64 west of I-270 decreased by approximately 10,000 to 15,000 vehicles per day during the closure. An assessment of where those vehicles have gone includes a wide array of explanations, as noted in the bulleted list below. It should be noted that a similar assessments will be completed during the eastern I-64 and further discussed in the Final Project Report (anticipated to be completed one year after the eastern closure has been opened).
 - o Traveled along the adjacent roadway network
 - o Switched to Metrobus and/or MetroLink
 - o Took advantage of RideShare and/or carpooling opportunities
 - o Reduced vehicle trips and/or combining several trips into a single trip
 - o Major companies allowed working from branch or satellite offices not impacted
 - o A small percentage even moved and/or switched jobs

- Based on the Traffic.com data, it appears that volumes along I-70 decreased west of I-170, while increasing east of I-170. Traffic volumes along I-270 south of I-64 increased by 30,000 to 40,000 vehicles per day. I-44 also experienced an increase in traffic volumes, ranging from 24,000 vehicles per day east of I-270 at Lindbergh Boulevard and as high as 7,000 vehicles per day near Jefferson Avenue.
- Travel speeds have dropped slightly in conjunction with increases in traffic volumes mentioned above on alternate routes. This has led to increased travel times along some of the region's freeway network. It should be noted that the increase was not as high as some would have expected due to some of the pre-closure capacity improvements. The range of increase travel times on some segments of alternate designated routes (like I-44, I-70 and I-270) were between 1 to 8 percent.
- Parallel arterial routes also experienced significant increases in traffic volume as well as travel time. East-west arterial corridors, such as Clayton Road and Ladue Road, realized increases of between 10,000 and 20,000 vehicles per day. North-south arterial corridors such as Hanley Road and Lindbergh Boulevard experienced a slight increase in traffic volumes and travel times.
- Transit usage varied significantly from '07 to '08 on a month-by-month basis. MetroBus ridership varied from an 8.33% drop from March '08-'07 to a 13.1% increase from February '07-'08. MetroLink ridership varied from a 4.45% drop from August '08-'07 to a 31.9% increase from July '07-'08. Overall, MetroBus ridership experienced an increase of 5.52%, while MetroLink ridership experienced a 5.23% increase between 2007 and 2008.
- The RideFinders Rideshare program experienced a significant increase through 2008 as it approached the 10,000 membership plateau in November. Carpool and vanpool programs had membership increases near 40 percent and 10 percent respectively over the previous year. Gas prices, regional and national economic impacts, and regional construction activities appear to be the strongest reasons for these increases. Gas prices started to decline in the latter part of 2008 and the early part 2009. The research team may be able to determine the impact caused by higher gas prices in 2008, if the 2009 gas prices remain stable. This insight could provide a better understanding of potential impacts caused by the I-64 construction project to the Rideshare program.
- Usage of commuter park-and-ride facilities in Missouri was up 22% in August 2008 to 1,913 parking spots used. It was noticed that park-and-ride facilities served by transit were better utilized, showing that the intermodal connection had some impact on how people traveled.

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This assessment uses a variety of tools to measure the region's mobility before, during, and after the construction and closure period. The assessment examines traveler shifts and their effects, using a multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels to gain the most relevant information.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Based on initial monthly and quarterly reports and traffic field monitoring, it was determined that limited mobility impacts were experienced along Tier 4 facilities. Tier 1, 2 and 3 facilities within the area described as Interstate 70 on the north; Interstate 44 on the south; and Route 141 on the west appeared be impacted from mobility standpoint. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) was gathered based on availability information.



Mobility data was obtained through numerous sources:

- MoDOT provided historical traffic counts through its annual traffic count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times. These field assessment runs were conducted daily during the early days of the closure to enhance and adjust the regional traffic plan to accommodate mobility shifts and reduce mobility impacts. These runs were reduced after the first 4 to 6 weeks to periodic runs to ensure optimum traffic conditions were maintained. MoDOT also maintains statistics for its park-and-ride facilities across the state, and provided quarterly count data for its facilities in the region. Finally, MoDOT has produced a series of e-mail updates (initially daily, now weekly) that provide area residents (and the study team) with important mobility information that describes changes in construction activities, peak hour traffic conditions, etc.
- Traffic.com is a commercial Web site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. These data are based primarily on sensors placed throughout the area. Traffic.com archives traffic volume, travel speed, and incident data – in 1-minute intervals – and has agreed to share this information with the research team based on their original data-sharing agreement

with MoDOT. The research team has developed customized software routines to collect and process significant amounts of data for use in this report. This source of data has been valuable in this study.

- St. Louis County has conducted and provided traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and has provided statistics. We will continue to work with the transit provider to gain as much insight as we can on the impact made by the transit in reducing construction related congestion.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data has been provided on a monthly basis.
- The research team has supplemented data collection where necessary, including travel-time runs, traffic counts, and field observations.

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by the new I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right.

In addition to capacity improvements, temporary access management measures were also taken to increase traffic flow at or near key signalized intersections. Cross access (including left turns to and from key arterials) was prohibited to improve traffic flow, especially during the peak hours. Dynamic message boards were also used to inform drivers to utilize through traffic lanes in cases where the through lanes would merge downstream of an intersection.

Crash reconstruction sites were located and marked along interstate facilities to assist in traffic incident management activities. These sites provided a safe location for police to work non-injury crashes while maintaining freeway traffic-handling capacities.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. Special funds were provided through the construction projects to allow Metro to conduct a regional marketing effort to encourage a shift towards transit as a transportation option.

Key Improvements to Regional Highways/Roadways
I-70 Restripe from I-170 to I-270 (add lane in each direction)
I-44 Restripe from I-270 to I-55/I-70 (add lane in each direction)
I-270 Restripe from I-64 to Olive (add lane in each direction)
I-270/I-64 Restripe interchange ramps to improve traffic flow (Revised during 2008)
I-270/I-44 Restripe interchange ramps to improve traffic flow
Clayton Road Restripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road
Ladue Road Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road
Improved Signal Timing along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park Parkway

Traffic Volumes

A key task included as part of this research project was the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. The graphics included in this section of the report were created using these systems. The research team developed a Macro using an Excel spreadsheet, and later using an SQL database application, to search the Traffic.Com and Gateway Guide traffic databases for specific traffic-related data for each highway segment of interest.

Prior to the closure, in baseline 2006, I-64 carried approximately 170,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding “outlier” days). In January-February of 2007, one year before the closure, this section of I-64 carried approximately 143,000 vpd on a typical weekday. This initial shift was potentially or partially caused by the anticipation of the construction along I-64 and travelers finding an early alternate route. One hundred (100) percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

One primary question of interest is, “where did all the traffic go?” Several sources have been used to determine the most appropriate answer to this question - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The project team summarized and analyzed roadway data based on the previously described “Tiered” facility approach. The following discussion highlights the trends in traffic volume, travel speeds, and travel time observed during the western closure.

The graphs on the following pages (Figures M1 through M6) include a detailed summary of several freeway and arterial roadways. It is important to note that this summary is based on average traffic conditions for Tuesdays, Wednesdays and Thursdays excluding every holiday, weekend and “outlier” weekday (Mondays and Fridays) from the available data sets.

Based on these graphs, the following preliminary conclusions can be gleaned:

- Volumes along I-64 west of I-270 decreased by approximately 10,000 to 15,000 vehicles per day. East of I-170, traffic volumes decreased by over 50,000 vehicles. As I-64 traverses through downtown St. Louis, decreases of 10,000 to 15,000 vehicles per day were observed.
- Based on the Traffic.com data, it appears that volumes along I-70 have slightly decreased west of I-170, while slightly increasing east of Kingshighway Boulevard.
- Traffic volumes along I-270 south of I-64 have increased by 30,000 to 40,000 vehicles per day. This trend continued through the entire timeframe of the closure.
- I-44 became a key alternative east-west route with increases in traffic volumes ranging from 24,000 vehicles per day east of I-270 at Lindbergh Blvd and as high as 7,000 vehicles per day near Jefferson Ave.
- I-170 became a key route that connected several of the arterial roadways throughout the region. South of Page Avenue, volume increases of 20,000 to 30,000 vehicles per day were observed. Just north of I-64, volume increases of around 8,000 vpd were observed.

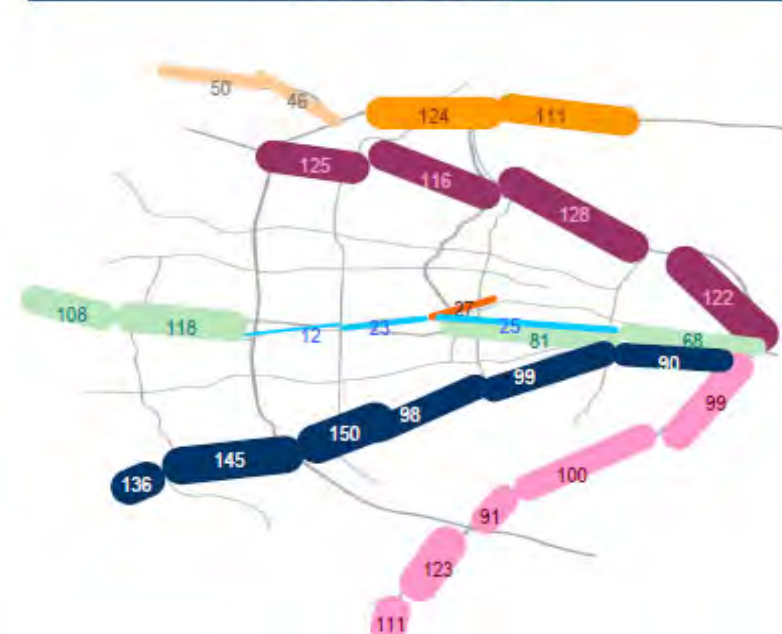
- Travel speeds dropped slightly and travel times increased (on major designated alternate routes 2 to 8%) slightly along the region's freeway network in conjunction with slight increases in traffic volumes.
- Parallel arterial routes also experienced significant increases in traffic volume and travel time. East-west arterial corridors closely located along the I-64 corridor like Clayton Road and Ladue Road, realized increases of between 10,000 and 20,000 vehicles per day.
- Forest Park Parkway experienced an increase of approximately 8,000 vehicles per day. The increase during the first few months of the eastern closure appears to be considerably higher.

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Baseline – 2006-2007



Period Jan-Feb 2008



Period Mar-Apr-May 2008



Period June-July-Aug 2008



Period Sept-Oct-Nov 2008



Source Traffic.Com

The New I-64 Economic and Regional Mobility Study
Annual Report – 2008
Figure M1 – Summary of Traffic Flow – East/West Routes

Baseline 2006-2007



Period Jan-Feb 2008



Period Mar-Apr-May 2008



Period June-July-Aug 2008



Period Sept-Oct-Nov 2008



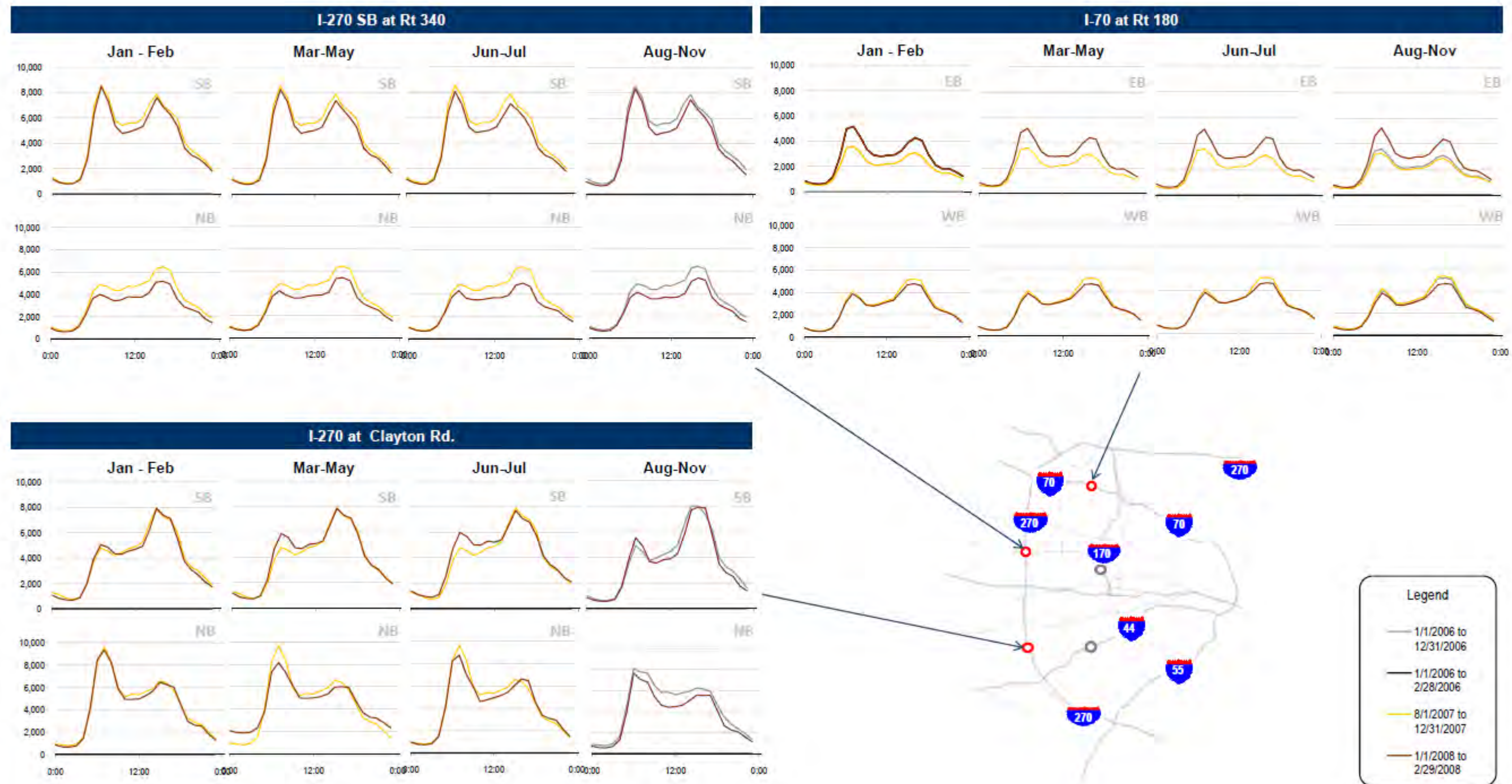
**The New I-64 Economic and Regional Mobility Study
Annual Report – 2008**
Figure M2 – Summary of Traffic Flow – North/South Routes

Source Traffic.Com

**The New I-64 Economic and Regional Mobility Study
Annual Report – 2008**

Figure M3 – Summary of Hourly Traffic Flow

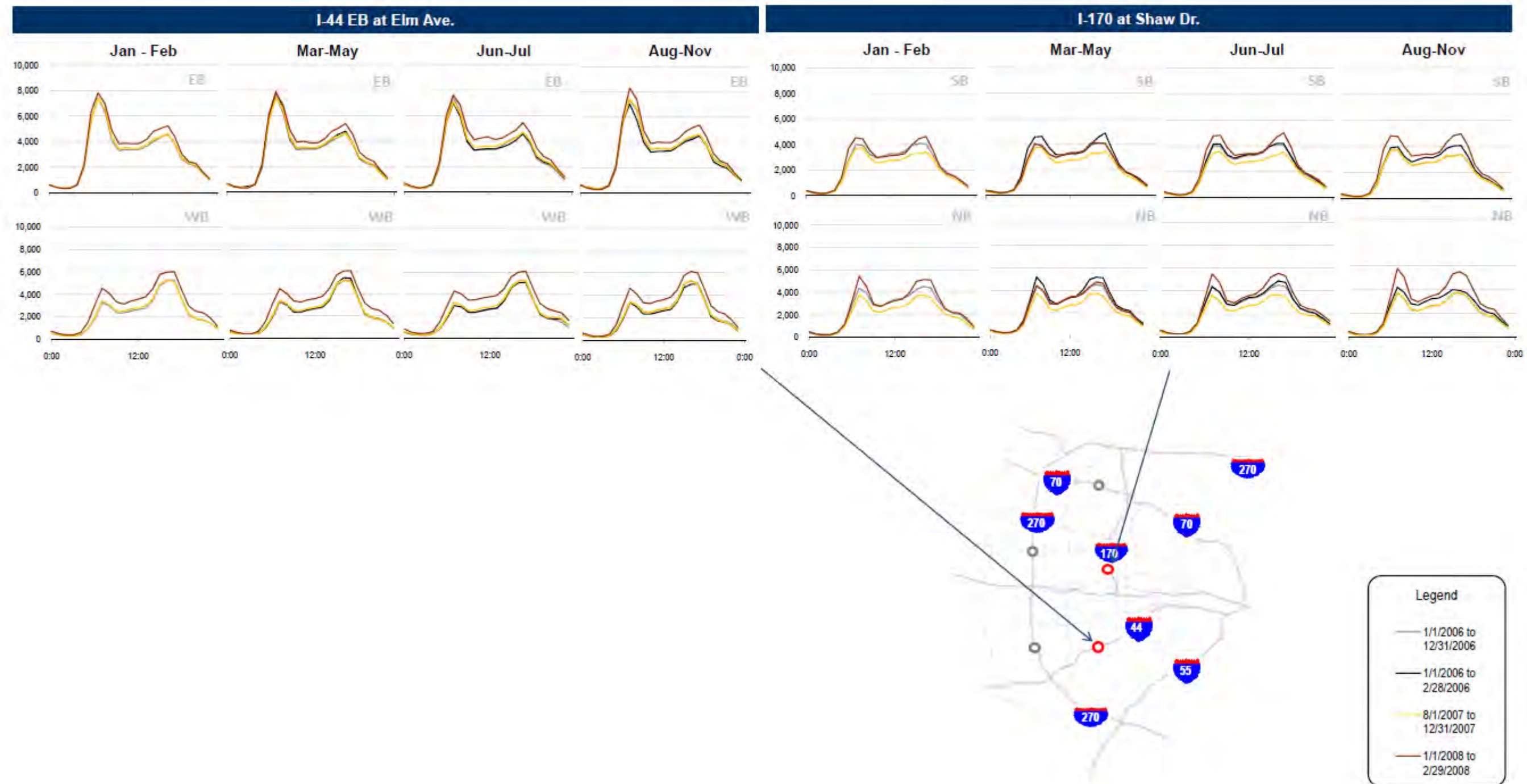
Source Traffic.Com

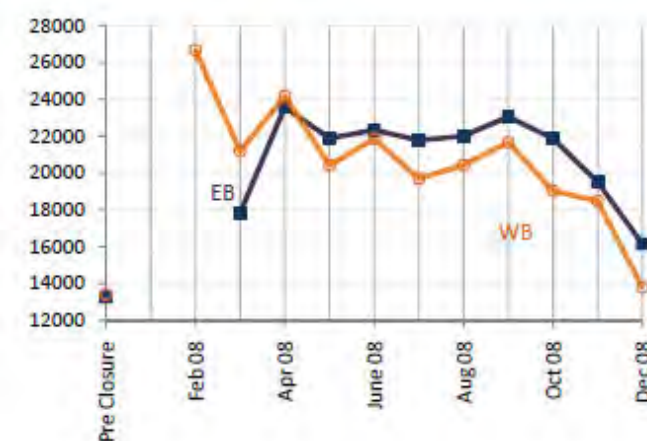
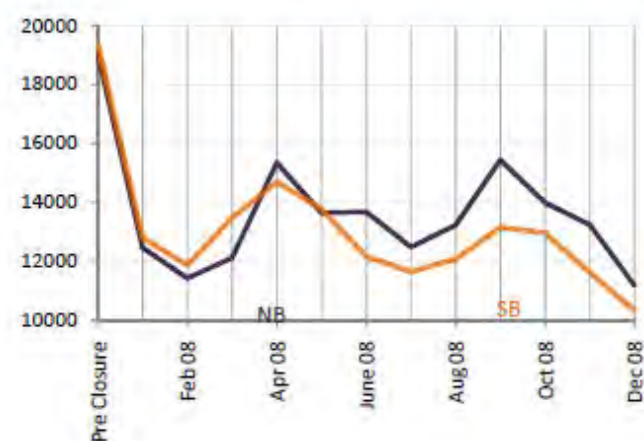
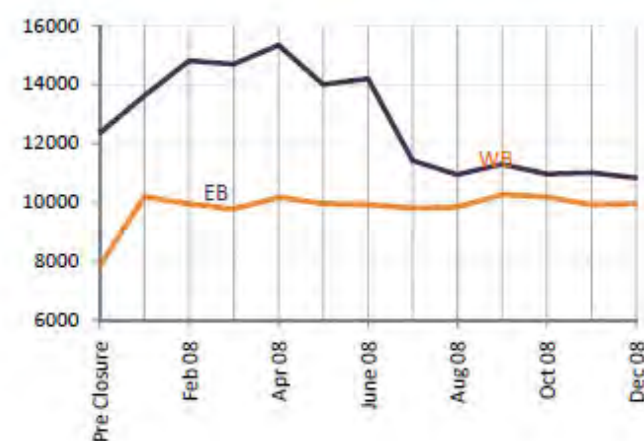
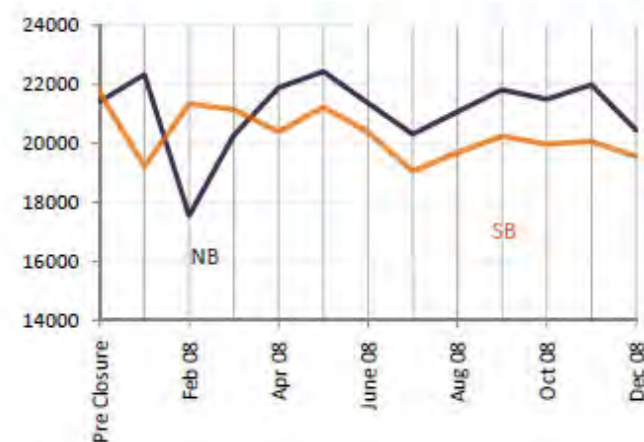


Source Traffic.Com

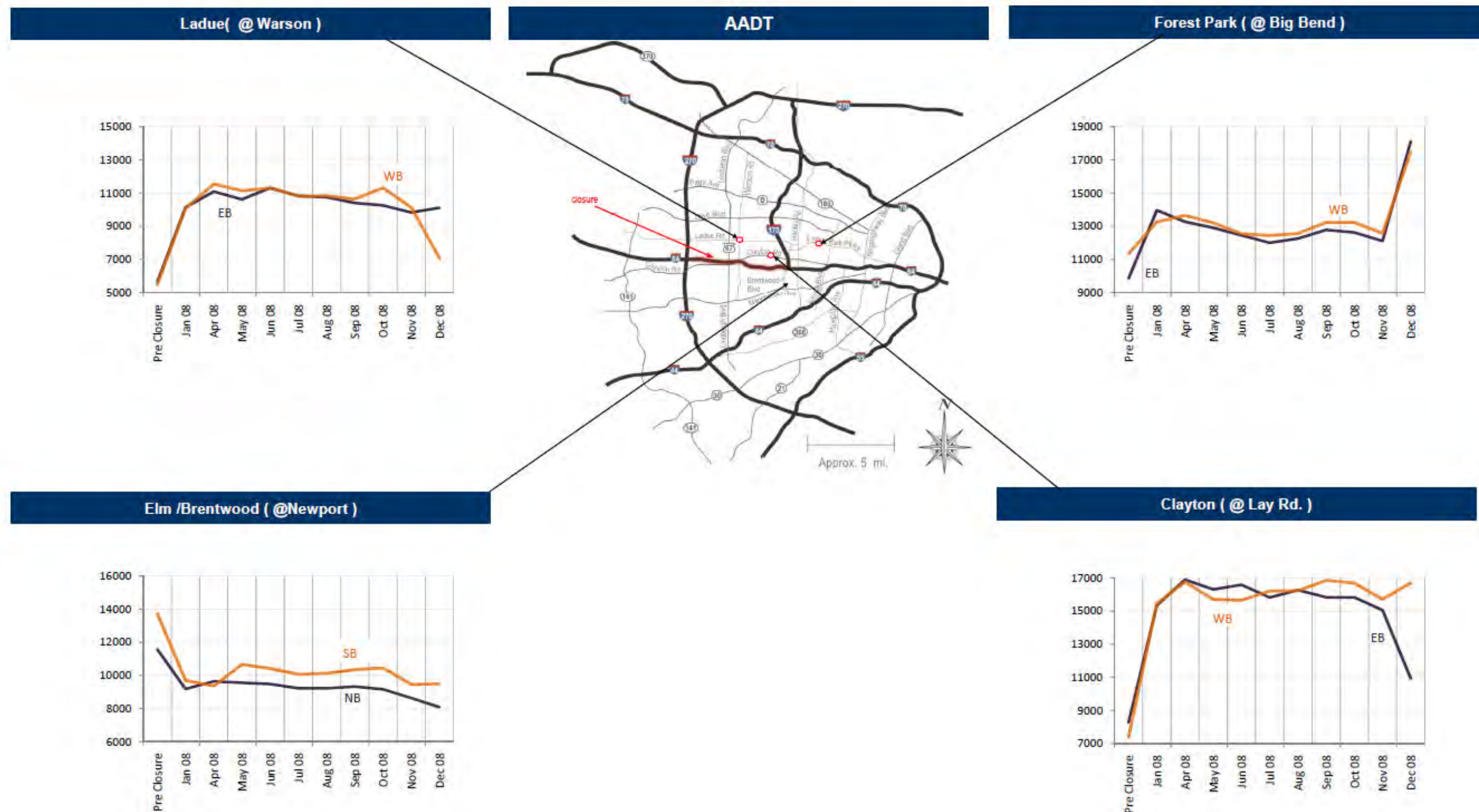
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Figure M4 – Summary of Hourly Traffic Flow





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Annual Report – 2008
Figure M5 – Summary of Arterial Average Daily Traffic Data***



*The New I-64 Economic and Regional Mobility Study
Annual Report – 2008
Figure M6 – Summary of Arterial Average Daily Traffic Data*

Average Speeds

Average speeds were obtained from freeway detection sites (source Traffic.com) based on a one-minute resolution level. Average speed is an indication of how well traffic is flowing and can be an indicator of traffic congestion or an incident/event occurrence. For purposes of this study, average speed is also used in the determination of travel time along the freeway network. Generally, travel time performance measurement is better understood by the general public, since it is how most travelers or commuters measure their trips.

Travel speed was measured using an average daily profile. Speed at low traffic volumes will be closer to the free-flow speed or speed limit of the highway segment (an upper horizontal straight line is the typical free flow speed). Profiles dipping below this line show traffic slowing due to traffic volume increases or incidents. Figures M7 and M8 on the following pages include a detailed summary of five spot locations along I-270, I-70, I-44 and I-170. It is important to note that this summary is based on average traffic conditions for Tuesdays, Wednesdays and Thursdays excluding every holiday, weekend and “outlier” weekday (Mondays and Fridays) from the available data sets. It should also be noted that baseline 2006 data was not available along all roadways. Based on these graphs, the following preliminary conclusions can be gleaned:

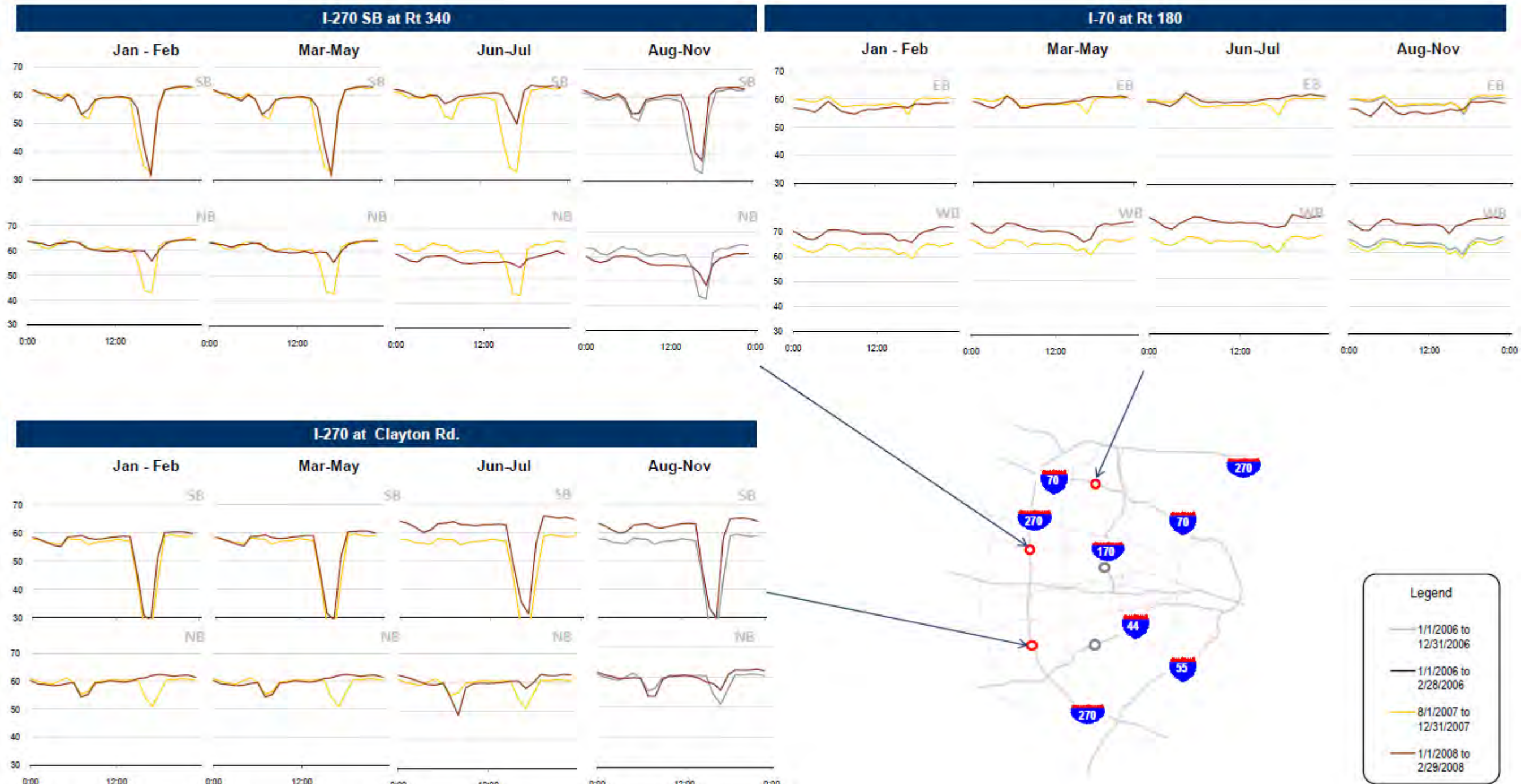
- In general, drivers traveling during the peaks hours experienced a decrease in travel speed.
- Travel speeds along I-270 at Clayton Road actually increased from 2007 to 2008. The increase could be attributed to the additional striped lanes and reduced merging traffic from I-64.
- Drivers along WB I-44 experienced a decrease in travel speeds of between 10 and 13 mph. This is most likely related to traffic exiting I-44 destined to I-270 NB or SB.
- Travel speeds along I-70 generally increased, except during the first and third quarters of 2008, where slight decreases were observed.

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Figure M7 – Summary of Hourly Travel Speeds

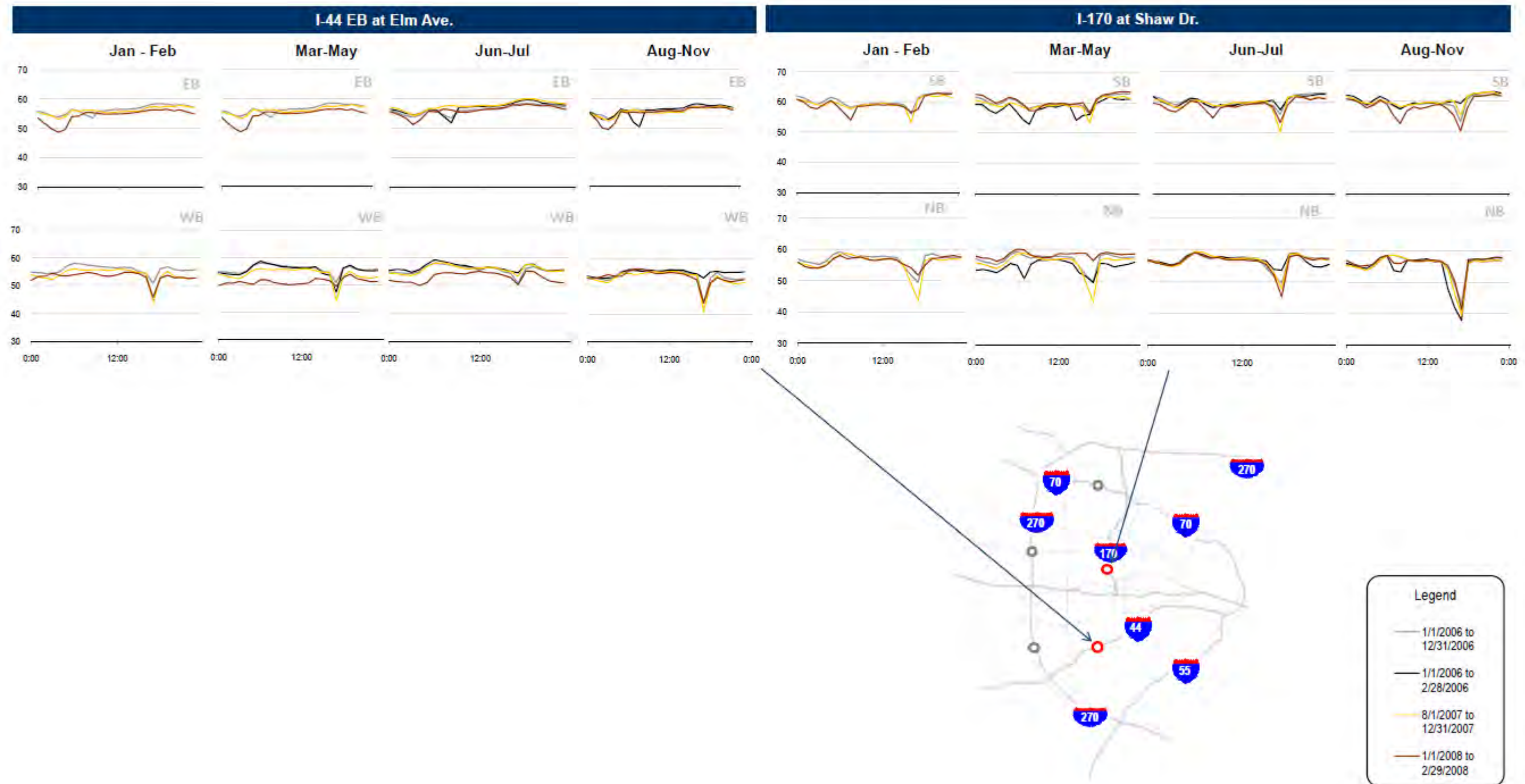
Source Traffic.Com



Source Traffic.Com

The New I-64 Economic and Regional Mobility Study Annual Report – 2008

Figure M8 – Summary of Hourly Travel Speeds



Travel Times

Travel times along the freeway network or Tier 1 arterials were calculated using the average travel speeds that were obtained from Traffic.com. Travel time statistics, as mentioned above, is a more understandable performance measurement, since most travelers or commuters measure their trips based on the time it takes to get from one location to the next. Travel times are measured from a known point to another known point (e.g., I-270 from I-64 to I-44 was 5 minutes during the morning peak period). Comparison of pre-construction (known as baseline), construction and post-construction periods will provide a better insight into impacts related to traveling during construction, as well as the future value gained from the constructed improvements. Table M1 depicts a summary of twelve (12) freeway segments within the potential impacted I-64 project region. The pink shaded ratios indicate an increase in travel time, while the green shaded ratios indicate a decrease in travel time compared to the based year.

AM Peak Period		Travel Time (min)					Travel Time Index			
Road Segment	Distance (mi)	8/1/2007 12/31/2007	1/1/2008 2/29/2008	3/1/2008 5/31/2008	6/1/2008 8/31/2008	9/1/2008 11/30/2008	1/1/2008 2/29/2008	3/1/2008 5/31/2008	6/1/2008 8/31/2008	9/1/2008 11/30/2008
I-70 EB from I-270 (Exit 232) to I-170 (Exit 238)	5.8	5.6	5.4	5.7	5.7	5.6	0.972	1.023	1.025	1.003
I-70 WB from I-270 (Exit 232) to I-170 (Exit 238)	6.1	6.0	5.9	5.8	5.6	5.7	0.982	0.958	0.930	0.941
<i>I-170 NB from I-70 to I-64/US 40 (Exit 0)</i>	7.6	8.0	7.2	7.6	7.0	7.1	0.909	0.959	0.877	0.894
<i>I-170 SB from I-70 to I-64/US 40 (Exit 0)</i>	7.7	8.7	7.6	8.4	8.0	9.1	0.872	0.965	0.915	1.038
I-270 NB from I-70 (Exit 20) to I-64 (Exit 12)	7.7	7.8	8.0	7.8	7.7	7.7	1.034	1.003	0.997	0.993
I-270 SB from I-70 (Exit 20) to I-64 (Exit 12)	7.6	9.3	9.2	8.8	7.9	8.6	0.996	0.944	0.853	0.923
I-270 NB from I-64 (Exit 12) to I-44 (Exit 5)	6.5	7.0	6.3	7.6	7.6	7.3	0.902	1.082	1.085	1.040
I-270 SB from I-64 (Exit 12) to I-44 (Exit 5)	6.6	7.0	10.6	6.7	6.2	6.3	1.530	0.966	0.892	0.907
I-44 EB from I-270 to Kingshighway (Exit 287)	10.5	11.5	10.9	11.2	10.8	10.9	0.949	0.979	0.939	0.952
I-44 WB from I-270 to Kingshighway (Exit 287)	10.5	11.1	12.0	12.0	11.3	11.2	1.080	1.076	1.014	1.007
I-64 EB from Rte 141 (Exit 22) to I-270 (Exit 25)	3.3	3.9	3.5	3.6	3.6	3.7	0.910	0.945	0.925	0.967
I-64 WB from Rte 141 (Exit 22) to I-270 (Exit 25)	3.3	3.0	2.9	2.9	2.9	2.9	0.950	0.963	0.962	0.962

Note: Due to bad data on I-170 in late 2007, traffic data from the same period in 2006 was used for the baseline and travel time index

PM Peak Period		Travel Time (min)					Travel Time Index			
Road Segment	Distance (mi)	8/1/2007 12/31/2007	1/1/2008 2/29/2008	3/1/2008 5/31/2008	6/1/2008 8/31/2008	9/1/2008 11/30/2008	1/1/2008 2/29/2008	3/1/2008 5/31/2008	6/1/2008 8/31/2008	9/1/2008 11/30/2008
I-70 EB from I-270 (Exit 232) to I-170 (Exit 238)	5.8	5.6	5.4	5.6	5.8	5.5	0.956	0.985	1.019	0.968
I-70 WB from I-270 (Exit 232) to I-170 (Exit 238)	6.1	6.3	5.9	5.8	5.7	5.7	0.940	0.927	0.901	0.901
<i>I-170 NB from I-70 to I-64/US 40 (Exit 0)</i>	7.6	8.3	7.2	7.8	7.1	7.2	0.868	0.932	0.850	0.866
<i>I-170 SB from I-70 to I-64/US 40 (Exit 0)</i>	7.7	7.8	7.6	7.8	7.3	7.7	0.974	0.994	0.933	0.985
I-270 NB from I-70 (Exit 20) to I-64 (Exit 12)	7.7	9.2	8.0	8.1	8.0	8.3	0.873	0.876	0.872	0.907
I-270 SB from I-70 (Exit 20) to I-64 (Exit 12)	7.6	9.8	9.2	8.9	7.8	8.8	0.947	0.916	0.800	0.903
I-270 NB from I-64 (Exit 12) to I-44 (Exit 5)	6.5	7.3	6.3	6.8	6.6	6.7	0.867	0.937	0.904	0.926
I-270 SB from I-64 (Exit 12) to I-44 (Exit 5)	6.6	12.7	10.6	10.6	9.6	9.8	0.840	0.838	0.757	0.774
I-44 EB from I-270 to Kingshighway (Exit 287)	10.5	11.5	10.9	10.8	10.5	10.7	0.949	0.940	0.917	0.930
I-44 WB from I-270 to Kingshighway (Exit 287)	10.5	12.0	12.0	11.9	11.6	12.2	0.999	0.990	0.967	1.015
I-64 EB from Rte 141 (Exit 22) to I-270 (Exit 25)	3.3	3.7	3.5	3.5	3.5	3.5	0.946	0.953	0.946	0.943
I-64 WB from Rte 141 (Exit 22) to I-270 (Exit 25)	3.3	3.7	2.9	2.9	3.0	3.0	0.788	0.790	0.806	0.807

Note: Due to bad data on I-170 in late 2007, traffic data from the same period in 2006 was used for the baseline and travel time index

Traffic.com provides a map display of traffic conditions for including information such as congestion levels, speed and travel time for any specific segment. Additionally, drivers could sign up to receive email alerts of traffic conditions for specific roadway segments at predetermined time periods. For example, “Eastbound Page between I-270 and I-170 at 7:00 AM” could designate your commute to work.

Travel time for key Tier 1 arterials were also collected and summarized. Four segments within close proximity to the closure were chosen for studying the travel-time impacts of the I-64 western closure. Email alert travel time data was collected at specific times during both the AM (7:00 or 7:30) and PM (5:00) periods. A total of 16 alerts (beginning in July 2008) were collected during a typical weekday. From travel times conducted by both agency staff and the research team before the closure, baseline travel times were developed for comparison. The segments are as follows;

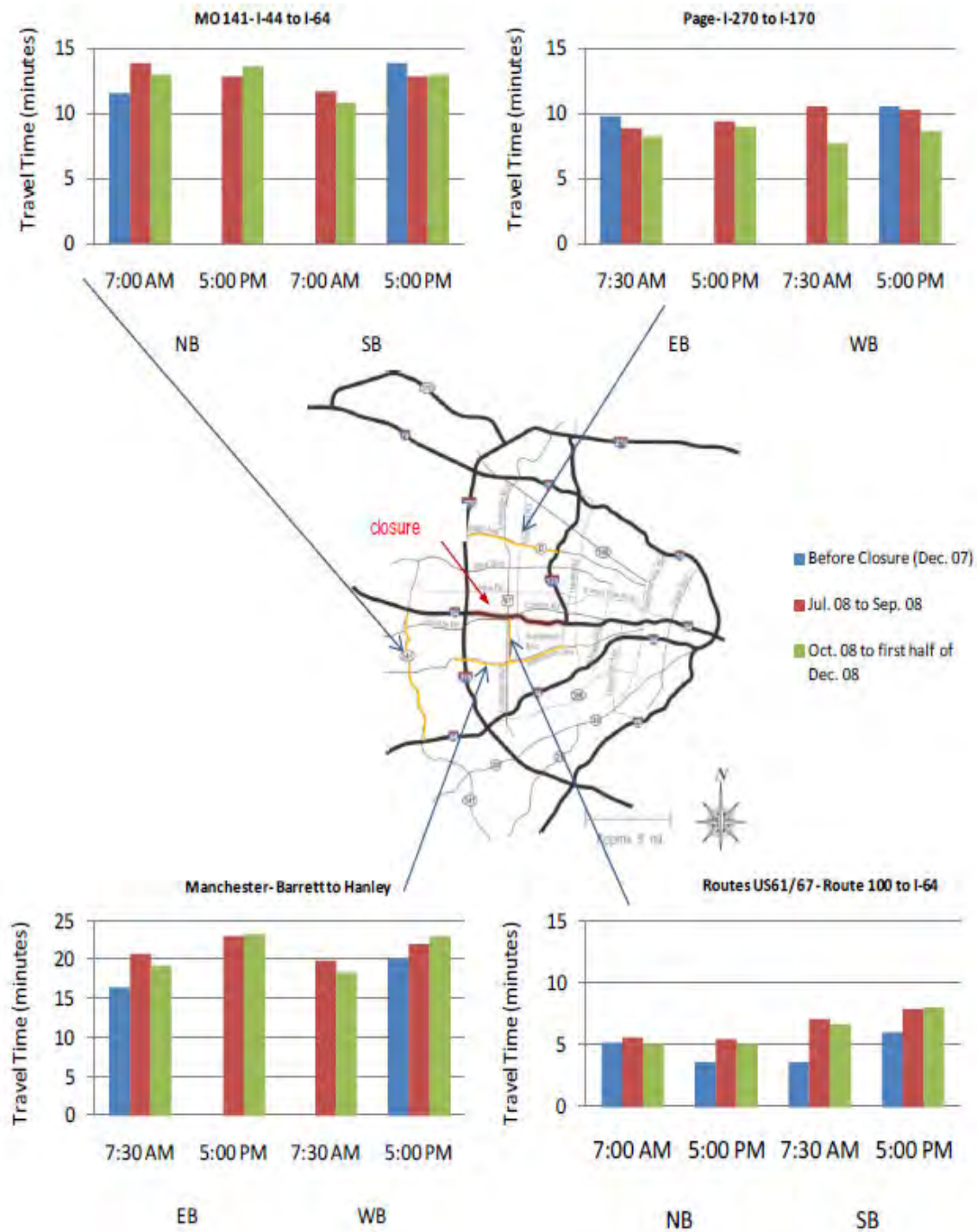
- Lindbergh Boulevard: Between Route 100 and US 40/I- 64 (2.45 miles)
- MO 141: Between US 40/I-64 and I-44 (7.5 miles)
- Page Avenue: Between I-270 and I-170 (5.5 miles)
- Manchester Road: Between Barrett Station Road and Hanley Road (7.95 miles)

To ensure the data being collected through the Traffic.com website was accurate, the team monitored Traffic.com data while project team members conducted actual travel time runs along the selected roadway segments. The observed differences were around 1 minute between the Traffic.com data sets and the observed field results that confirmed the traffic information source general reliability was acceptable.

Figure M9 depicts the average travel times for the third and fourth quarters of 2008 for the selected arterials. Since the data from Traffic.com was only available from July 2008 forward, the pre-closure data was taken from actual travel time runs obtained in December 2007. In general, travel times increased, but not significantly. Travel times along Page Avenue actually dropped. This was most likely due to the additional through lane that was added prior to the closure and the improvement signal timing implemented.

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Figure M9 – Travel Time Along Selected Tier 1 Arterial Roadways



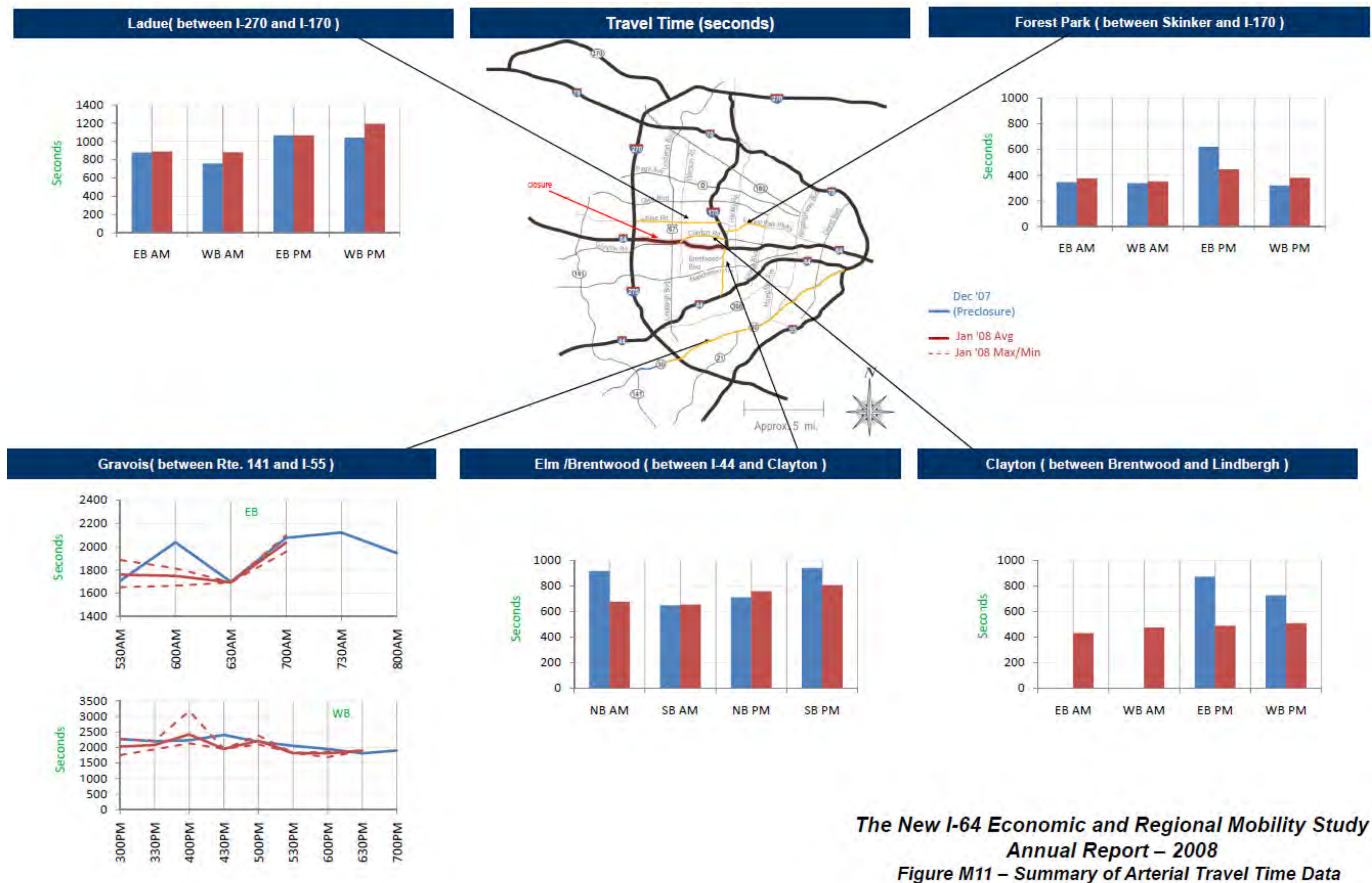
Summarizing travel time data along the remaining arterial roadway network was much more data intensive and required more manual handling than the more automated freeway network. Electronic email alerts and/or data streams from Traffic.com were not available. Project team members and several agency staff members conducted actual travel time runs along each of the primary corridors selected for analysis. Travel time data for over 25 arterial roadways was collected at various times throughout the western closure of I-64. From this data, the project team selected 10 roadways and conducted a detailed analysis of the travel time data.

One of the key considerations that must be accounted for is having a clear understanding of when the actual travel time runs were conducted. Simply stating, “during the am peak hour”, does not distinguish the timeframe for an apples to apples comparison. Comparing a 6:30 am travel time run to an 8:00 am travel time run would not provide a fair assessment between a before and after comparison. Since travel times can vary by time-of-day, multiple travel-time runs were taken during each peak period. In general, three to five “before” runs were conducted in December 2007. Figures M10 and M11 depict a series of graphs highlighting the selected roadway segments. A more detailed set of graphs are also included in the appendix. Based on the travel time data, the following preliminary conclusions can be gleaned:

- Average travel times along northbound Route 141 increased slightly. The maximum travel times, however, were significantly higher than the pre-closure travel times.
- Average travel times along westbound Route 100 (Manchester) at the beginning of the PM peak hour increased rather significantly, but generally decreased during the five to six o'clock timeframe.
- Page Avenue experienced higher average travel times during the AM peak hour and similar travel times during the PM peak hour.
- Ladue Road and Clayton Road experienced higher average travel times when compared to the pre-closure. Since traffic on these roadways increased significantly, this was not a surprise to the project team.
- Average travel times along the remaining corridors were generally within acceptable limits when compared to pre-closure travel times.

In general, increases in post-closure travel time runs were observed along several of the corridor. This, most likely, could be due to significant increase in traffic volumes using these facilities. These conditions could have been significantly worse if not for the planned and implemented improvements in the region's signal timing and coordination efforts to address anticipated increases in traffic volumes. It should be noted that collaboration between local and state agencies was a critical factor in maintaining acceptable traffic flow. The public appeared to notice these improvements, based on survey responses received.

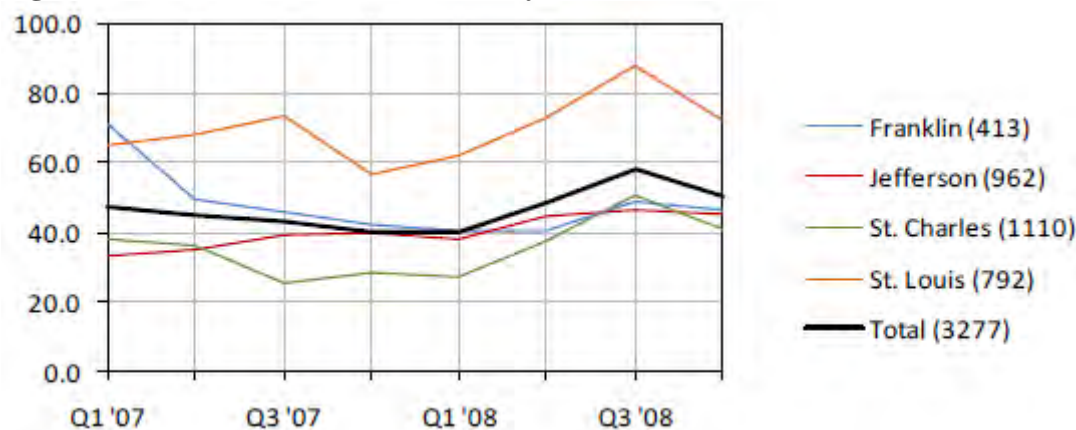




Park-and-Ride

Figure M12 below summarizes both baseline year (2007) and construction year one (2008) quarterly percentage of parking spaces used at MoDOT's Park-and-Ride lots in St. Louis County and neighboring counties. As the graph indicates (numbers in parenthesis indicate total number of available spaces), the 2nd, 3rd and 4th quarters indicated an increase in usage. This increase could be somewhat related to gas prices and/or the economic downturn in 2008. The construction and closure along I-64 may have had a limited impact on park-and-ride usage, since the 1st quarter actually showed a decrease when concerns of the closure's impact were at their peak. The research team will continue to monitor these trends to see if we can gain better insights into whether or not construction caused a shift to either more carpooling or transit services that stop at these park-and-ride facilities.

Figure M12 – Park-and-Ride Summary



Transit

The figure to the right depicts the overall change in total transit ridership since 2004. In general, transit ridership has increased over the past several years. In terms of the potential changes in transit ridership during the I-64 closure, monthly transit ridership varied significantly between 2007 and 2008. Several factors could have contributed to this increase, such as an increase in gas prices and a general downturn in the economy. Figures M13 and M14 depict quarterly and monthly percentage changes in ridership totals for both MetroBus and MetroLink. In general, MetroBus ridership increased during all four quarters, while MetroLink ridership increased during the first three quarters. Figure M15 depicts a summary of MetroBus ridership along four routes located within close proximity to I-64. In general, significant increases were observed along three of the four routes.

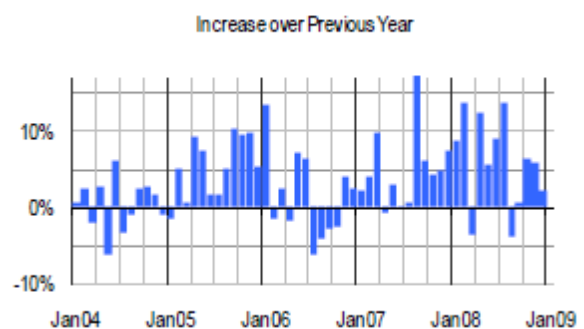


Figure M13 – Quarterly Percentage Change in Metro’s Ridership 2007 vs. 2008

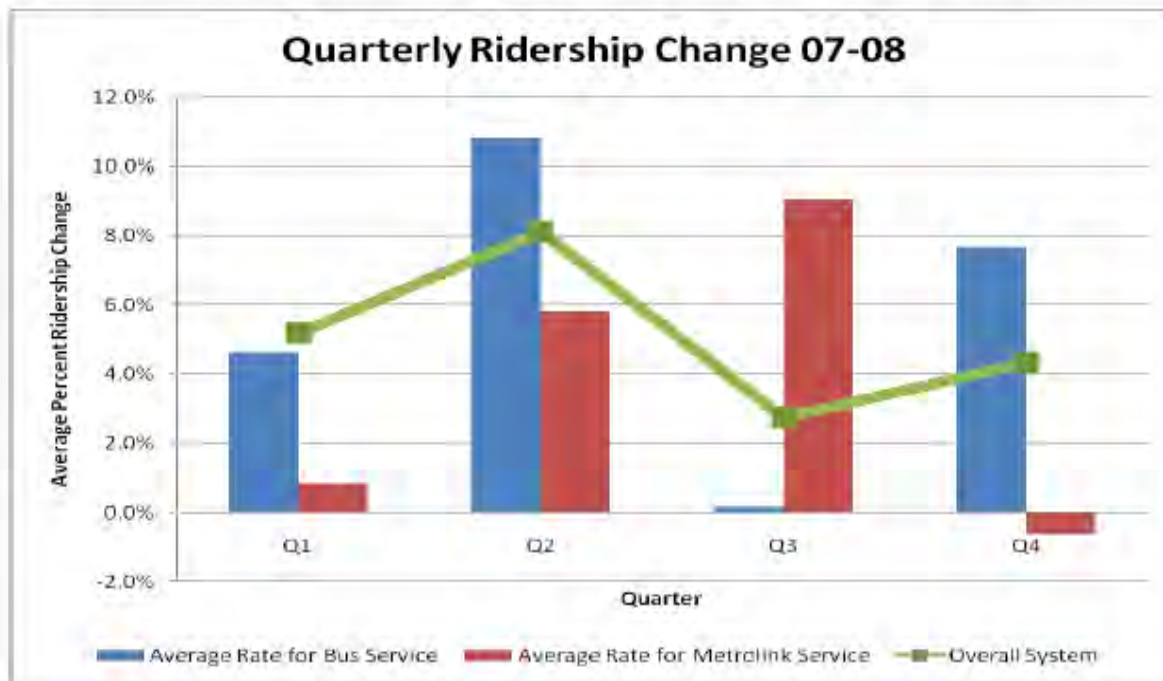


Figure M14 – Monthly Percentage Change (Year 2007 vs. 2008) Selected Metro’s Routes

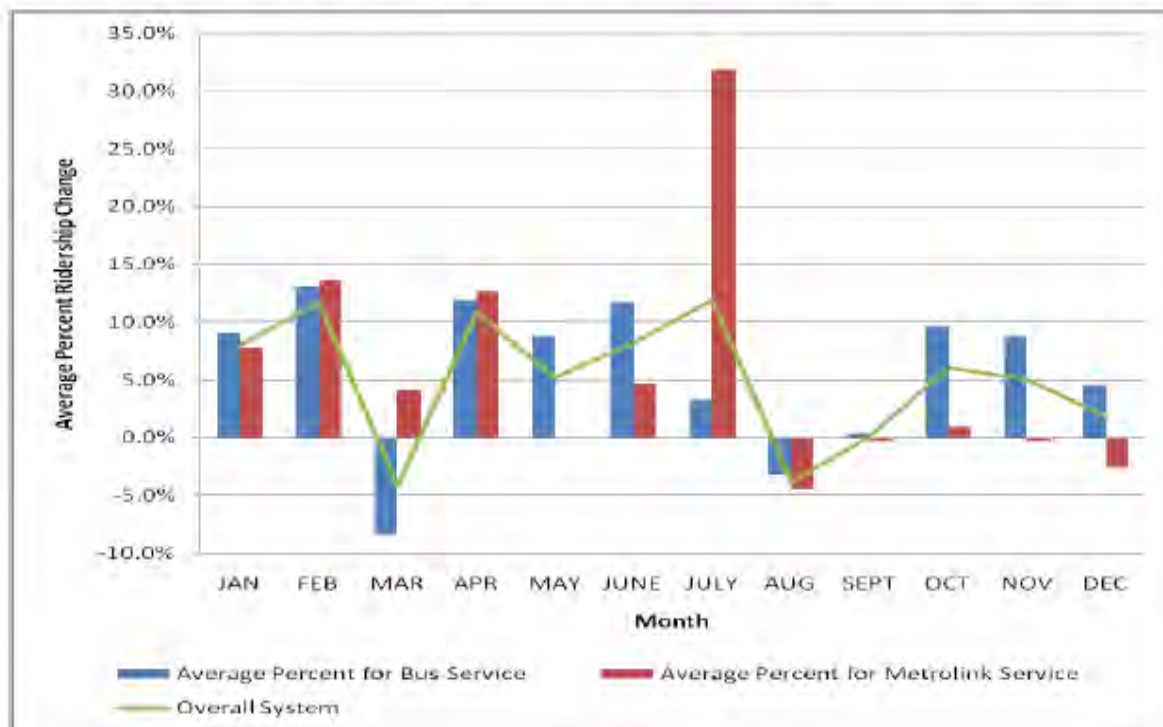
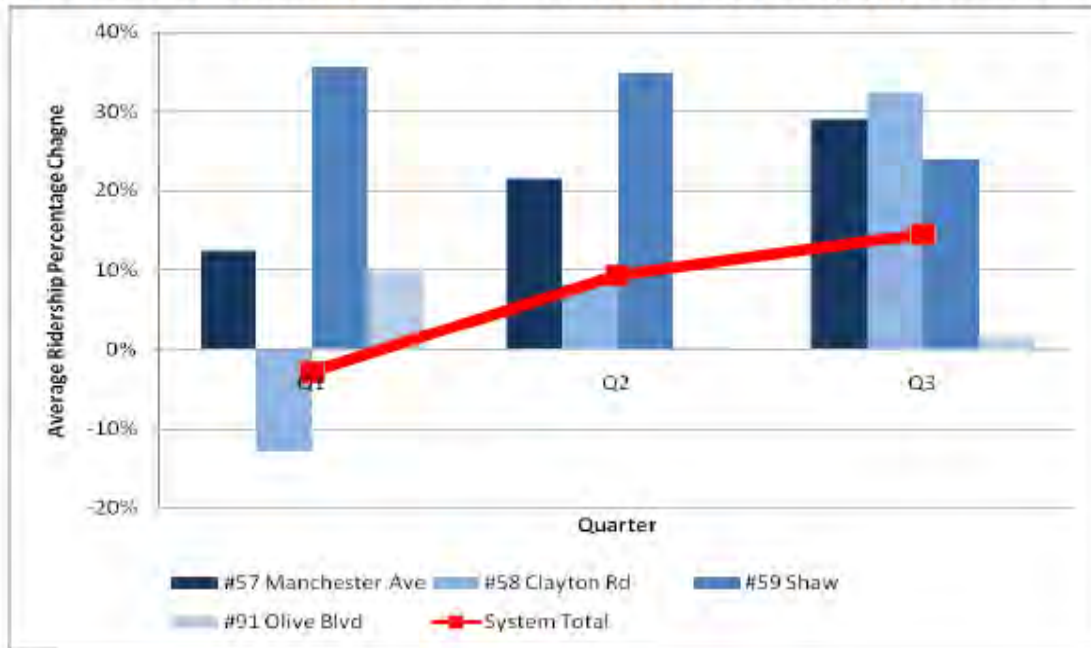


Figure M15 – Selected MetroBus Routes near I-64 Percentage Change (Year 2007 vs. 2008)



Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The M16 and M17 figures shown below were developed from historical ridership information from RideFinders. In general, these graphs indicate a general upward trend since the second half of 2007. This trend continued throughout most of 2008 with the highest comparative increase occurring in November 2008 (vs. 2007) with 2,587 more carpoolers (+41%) and 111 more vanpoolers (+13%). As previously mentioned, these increases could be due in part to gas prices and the economic down-turn in addition to the New I-64 construction project. The research team will continue monitor this monthly information.

Figure M16 Carpool Summary

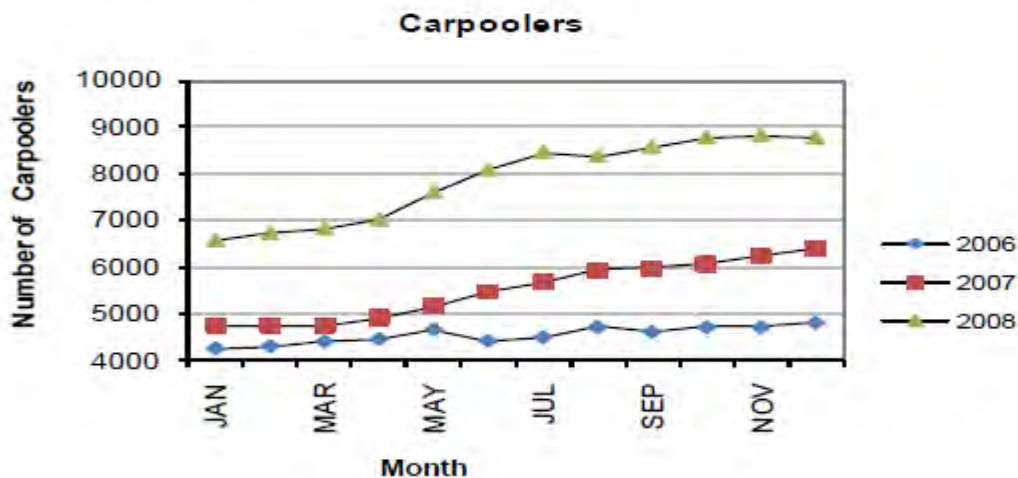
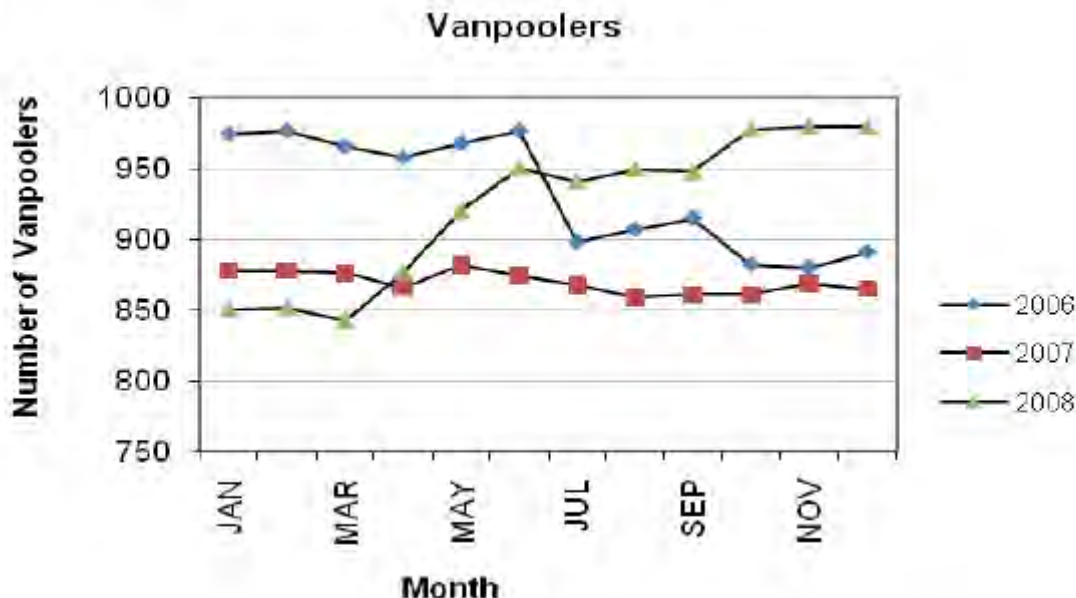


Figure M17 – Vanpooler Summary



Mobility – Crash Analysis

On January 2, 2008, the Missouri Department of Transportation (MoDOT) closed I-64 for reconstruction purposes. During the planning stages of this reconstruction project, the plan to close all lanes of roadways was met with concern from many aspects, inciting questions from traffic safety engineers and even the general public alike: *Could closing the roadway possibly contribute to more (or less) crashes than before? And, if noticeable changes existed in the number and types of crashes, are the changes due to closing the roadway or other influencing factors?*

This study aims to answer these questions by examining crash data before and after the closure, and by providing objective explanations to the changes if any. To achieve this goal, this study conducts two analyses (i.e., Crash Analysis and Crash Rate analysis). In this report, we describe basic methods applied to the analyses, the data sets acquired for the analyses, and resulting conclusions. This study is an on-going research project, and thus will be continued to extend the analyses with more crash data whenever it is available. The main findings from two analyses are summarized as follow:

Crash Analysis:

The research team was provided 5-year (2004-2008) crashes data that includes all accidents occurred on 16 roadways in the vicinity of the I-64 closure site. Using the data set, 1-year (i.e., 2008) post-closure crashes are compared to 4-year (2004-2007) pre-closure crashes in various ways. Table 1 and Figures 1-3 show the total number of crashes on each routes investigated. The major findings from the crash analysis are as follow:

- Compared to year 2007, the number of crashes in 2008 slightly increased in the routes such as I-70 (4%), I-44 (4%) , I-55 (5%) and MO 100 (6%) whereas the number

decreased in the routes such as I-270, I-170, MO 340, US40/I-64 and MO141. Other routes almost stayed at the level same.

- It is found that the crash increase on I-70 in 2008 was partly due to the record breaking heavy rain in 2008. This finding is confirmed by figure S-37 (Appendix page 57) showing the increasing trend of the out-of-control crashes on the same highway in 2008.
- In cases of MO100 or I-70, the increasing trend started before the I-64 closure (i.e., before 2008). So, it is hard to imply whether the I-64 closure causes the crash to increase.
- Although each route shows its own trend, the overall crashes on all three types of highways (i.e., interstate, MO, and US highways) have decreased in 2008.
- The observational inspections conducted in this study leads us to a tentative conclusion that there is no strong evidence proving that I-64 closure contributed to the crash increase on the highways that are potentially influenced by the closure. Continuation of this crash analysis through 2009 and 2010 will provide additional information that will either confirmed the tentative conclusion or provide information that changes this initial conclusion.

Table S-1 shows the trend in total crashes for the various highways identified as highways that could be potentially impacted by the I-64 construction project.

Table 1: Total Crashes by year (2004 - 2008)

	Route	2004	2005	2006	2007	2008
Interstate Highway	I-44	1,100	1,061	1,037	1,086	1,126
	I-270	2,103	2,201	2,302	2,287	2,083
	I-64	1,624	1,610	1,494	1,205	717
	I-70	1,907	1,998	2,004	2,072	2,161
	I-170	906	827	904	873	815
	I-55	964	948	963	948	994
	All IS	8,604	8,645	8,704	8,471	7,896
MO Highway	MO366	655	645	652	519	526
	MO30	1,298	1,297	1,049	1,048	941
	MO100	1,179	1,085	1,019	1,086	1,146
	MO115	455	432	382	370	385
	MO180	879	822	721	689	675
	MO340	1,068	935	1,059	1,053	998
	All MO	5,534	5,216	4,882	4,765	4,671
US highway and ExpressWay	MO141	503	566	504	589	503
	RtD	728	682	636	690	699
	US61	853	828	819	791	761
	US67	484	386	396	358	345
	US40	489	536	553	529	344
	All US	3,057	2,998	2,908	2,957	2,652
Overall		17,195	16,859	16,494	16,193	15,219

Index value provides an easy way to display and show trends or changes. An established base year can be used to compare against other years to show increases or decreases from the base year. Example – 100 crashes occurred in the base year and 90 crashes occurred in the next year – the index value would be 0.9 (90 divided by 100) or a 10 percent reduction. Year 2004 is the based year and Figure S-1 through S-3 shows the resulting index values each highway type group.

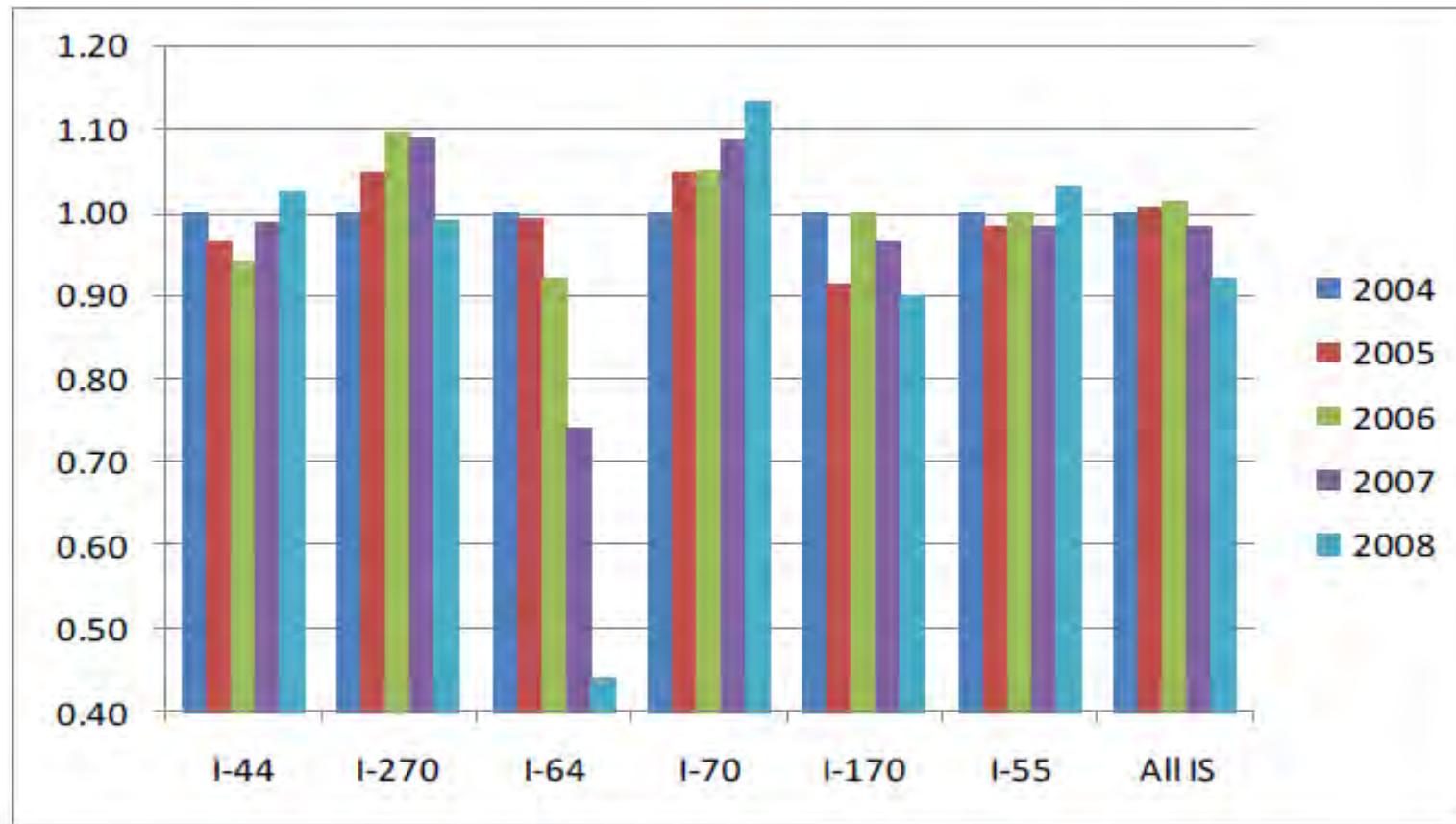


Figure 1: 5-year Crashes, Interstate Highway (2004 through 2008)

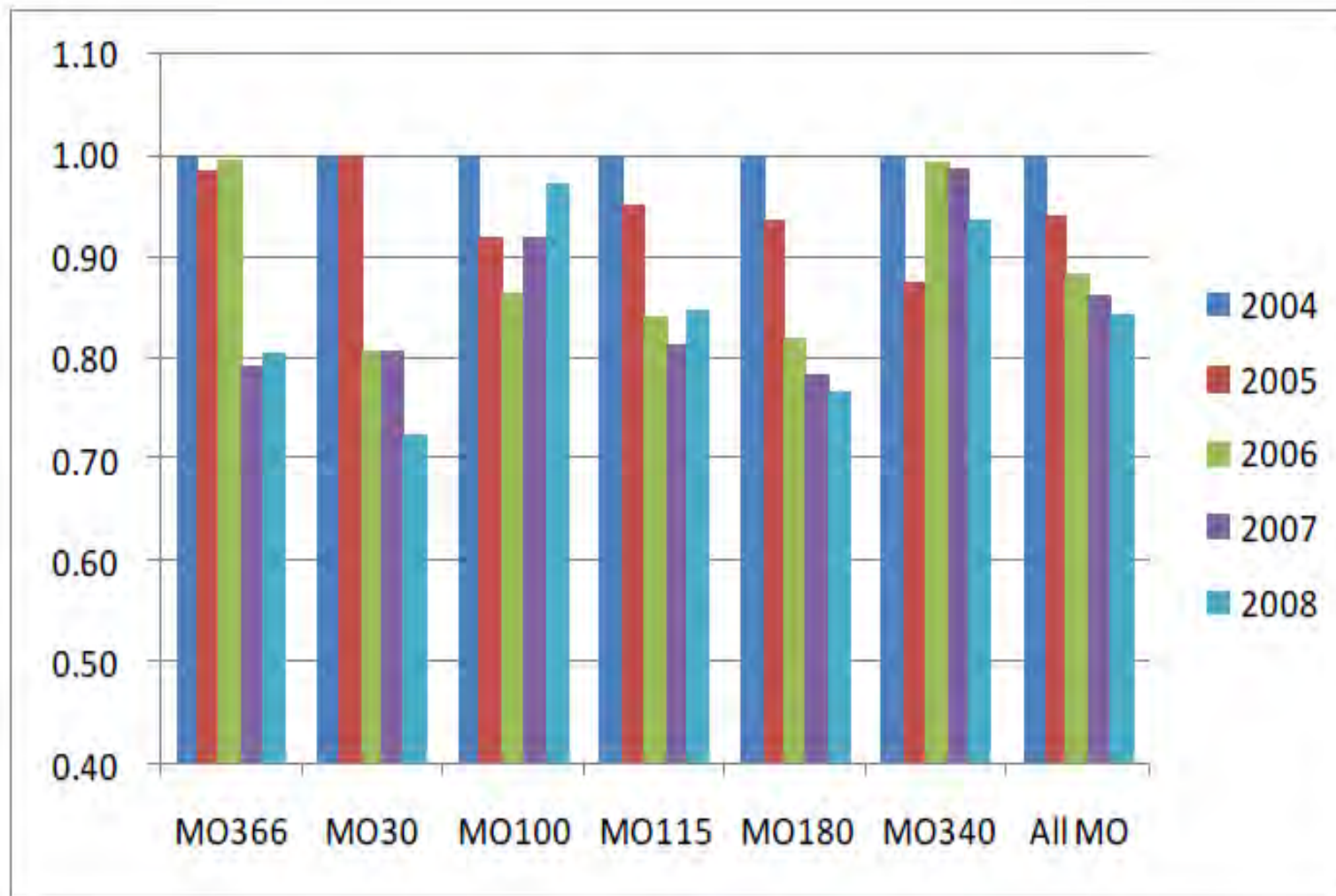


Figure 2: 5-year Crashes, MO Highway (2004 through 2008)

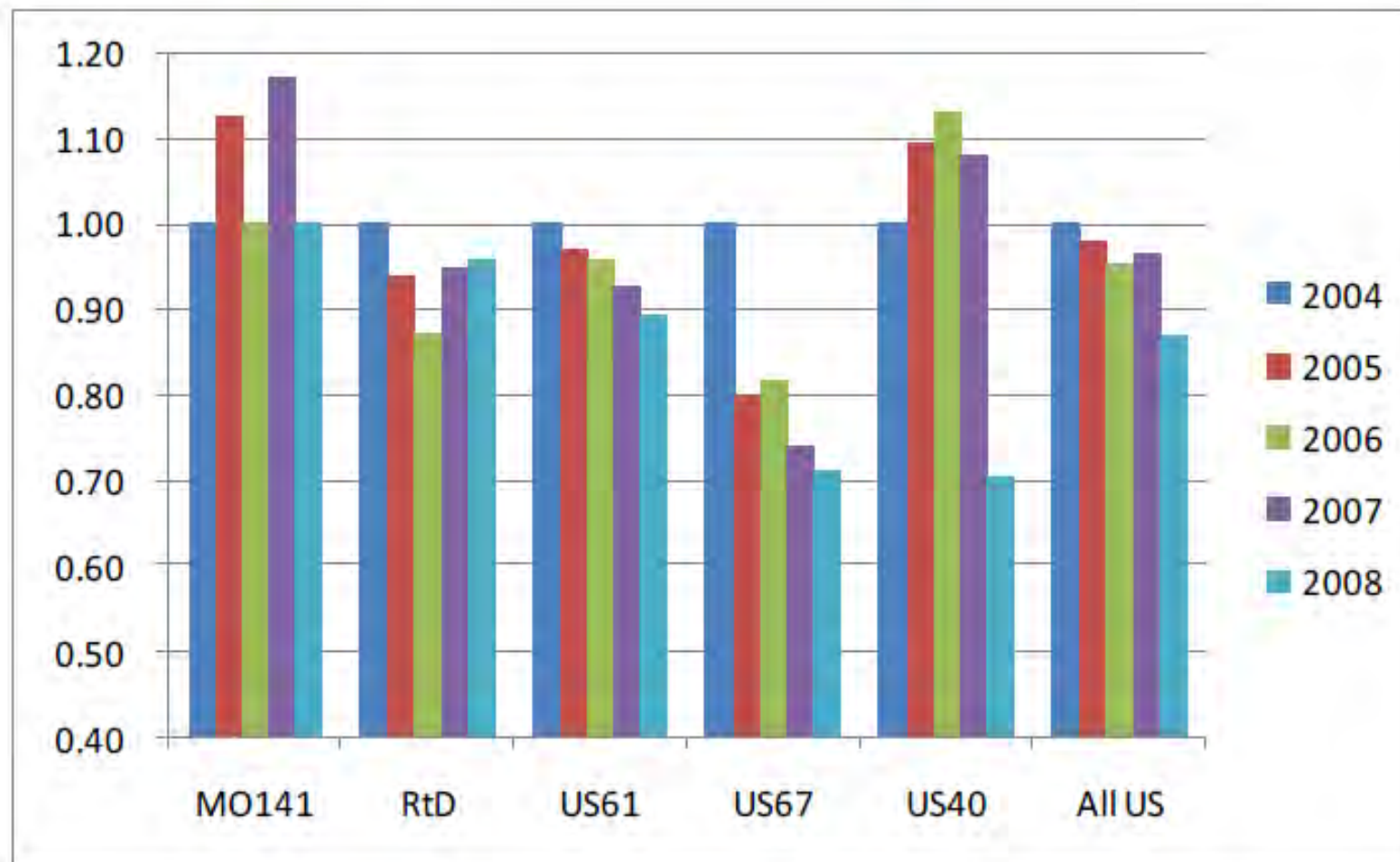


Figure 3: **5-year Crashes, US Routes and Expressways** (2004 through 2008)

Crash Rates Analysis:

The crash rate represents the intensity of crashes relative to total vehicle miles traveled. For example, if roadway A shows a higher crash rate than roadway B, it indicates that roadway A is more vulnerable to crashes than roadway B in case the traffic volume and the roadway lengths of both roadways are same (i.e., under the same condition.) Table S-2 and Figures S-4, S-5 and S-6 present the crash rates on the roadway investigated, and the major findings from the crash analysis are as follow:

- Compared to year 2007, crash rates on most routes either decrease or remain about same in 2008 except for six routes including I-70 (4%), I-55 (6%), MO 366 (4%), MO100 (8%), MO115 (6%) and MO Route D (3%).
- However, it is hard to conclude that I-64 closure caused the crash rate to increase in year 2008 since either this increasing trend started before the I-64 closure or the crash rates were less than highest crash rate over the four baseline years (2004 through 2007).
- The I-55 Southbound section showed an increase in 2008, further investigation is recommended when more crash data are available.
- US-61 shows the highest crash rates over the evaluated years, but the crash rate decreased in 2008 as compared to 2007. Since US-61 is routed over both US-40 and US-67 in the study area, some recent indications have risen that crashes might be logged to the wrong route causing a higher rate for US-61 and lesser for US-40 and US-67.

Table 2: All Crash Rate (Both Directions)

		2004	2005	2006	2007	2008
Interstate Highway	I-44	162	157	150	156	157
	I-270	154	161	165	162	155
	I-64	226	226	207	169	119
	I-70	196	205	215	218	226
	I-170	217	199	215	206	193
	I-55	153	151	143	139	147
MO Highway	MO366	392	396	406	321	335
	MO30	568	579	465	466	427
	MO100	553	521	498	530	572
	MO115	645	611	647	633	673
	MO180	461	441	444	424	425
	MO340	516	471	465	462	433
US highway and ExpressWay	MO141	350	404	353	412	359
	RtD	407	388	364	396	409
	US40	100	110	120	116	77
	US67	346	290	325	294	268
	US61	900	894	800	833	818

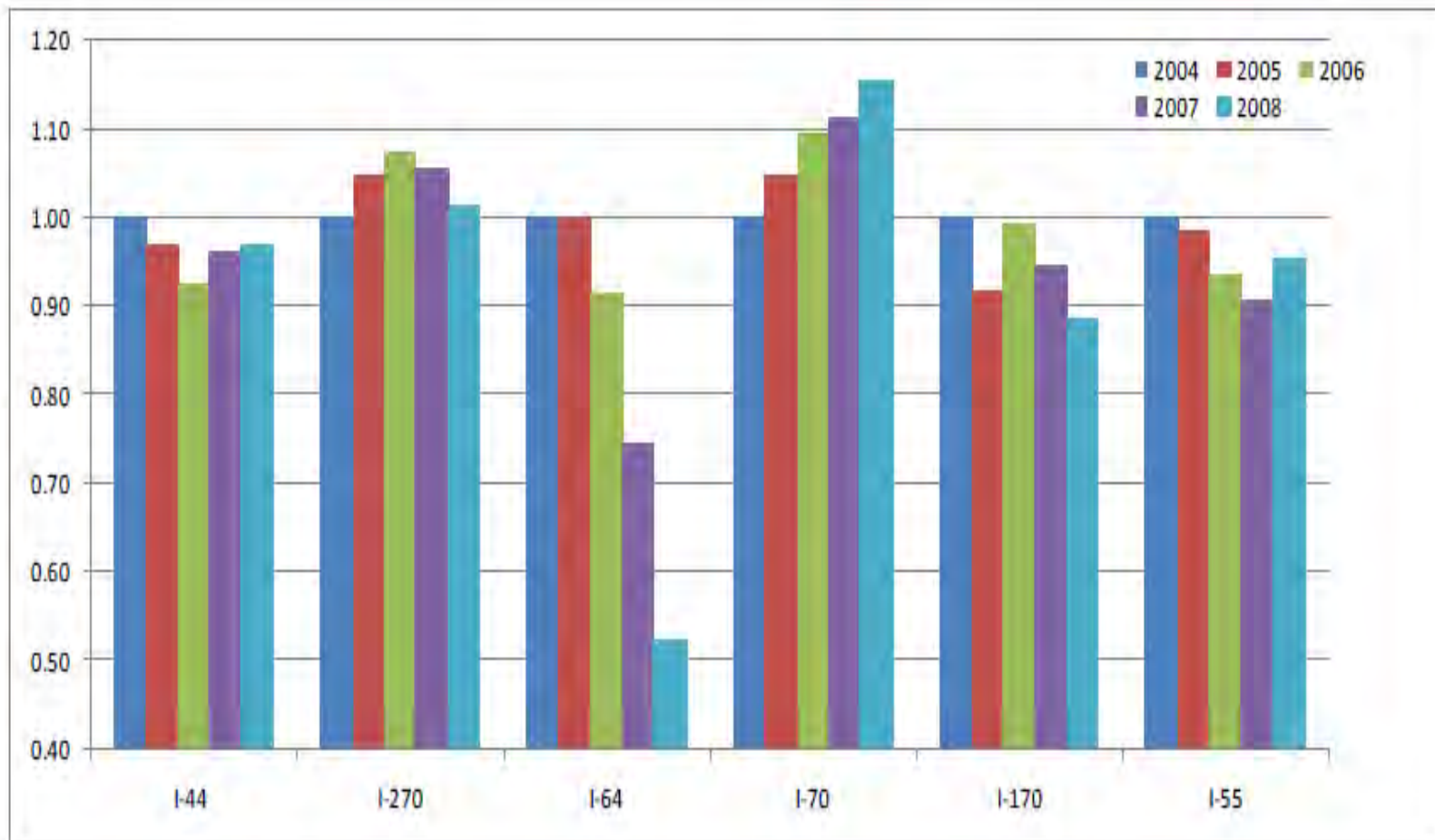


Figure 4: 5-year Relative Crash Rate, Interstate Highway (Both Directions, Base year: 2004)

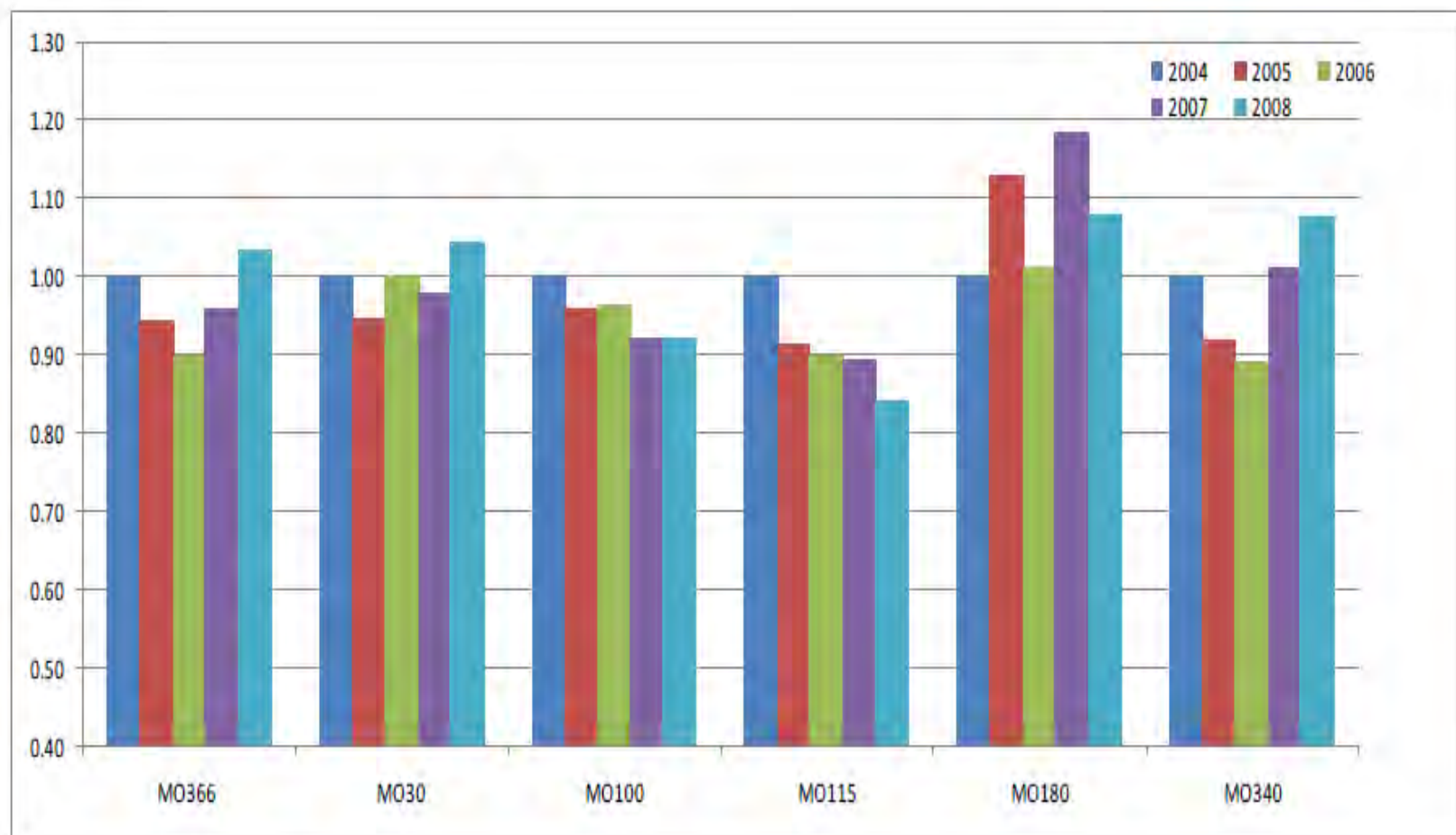


Figure 5: 5-year Relative Crash Rate, MO Highway (Both Directions, Base year: 2004)

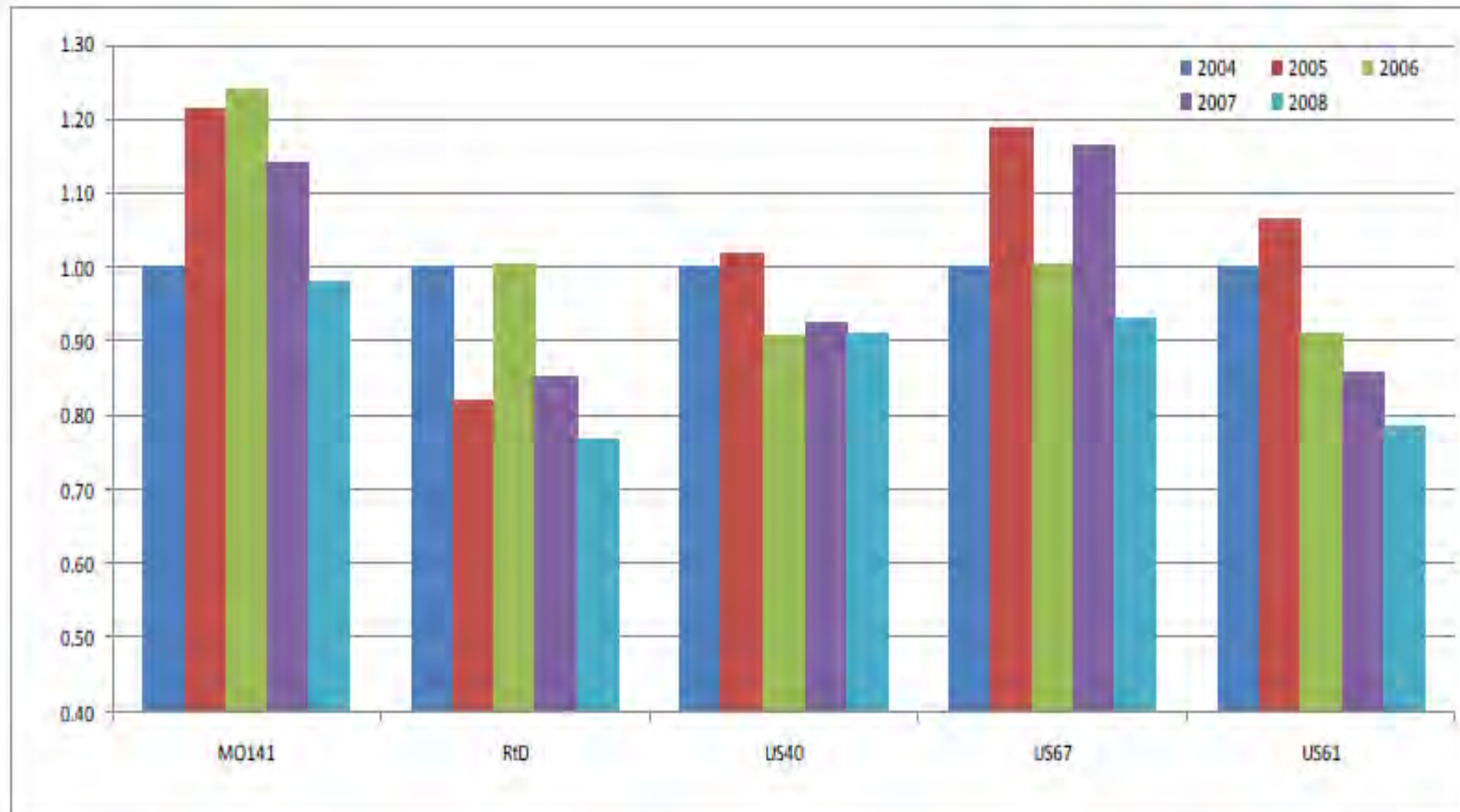


Figure 6: 5-year Relative Crash Rate, US Highway and Expressway (Both Directions, Base year: 2004)

Economics Discussion

The economic analysis of the New I-64 project evaluates and measures the impacts on the economy and regional mobility of the full closure deployment to improve the New I-64 corridor. This analysis tracks and focuses on the impacts before, during, and after the systematic closures of I-64 to determine how the closures impact the local economy, businesses, and traffic patterns. The overall objective of this analysis is to determine if the closures are disrupting local businesses due to increased congestion and possible barriers to access labor, customers, or shipments. Various methods are used to quantify and determine the magnitude of local and regional impacts.

Thus far data has been collected for the period prior to the initial construction through to the re-opening of the Western closure. This analysis assesses the economic impacts to local businesses, the real estate market, commuters, and revenues due to the closure. Beyond published data, two surveys were developed and released to local businesses periodically to track the effects of I-64's closure on (1) commuting impacts, (2) transportation costs, and (3) sales, visitation, and economic activity.

Overview of Methodology

Published Economic Data

The purpose of the published data collection is to track economic indicators over the course of the I-64 reconstruction project and establish an economic baseline of current conditions in a manner consistent with the previous MERIC Pre-Construction Analysis¹. The starting point for data collection was to review the data sources from the 2006 Pre-Construction analysis, and catalogue other Federal, State, County, City, and private-sector data resources. The core economic and demographic concepts selected are: employment, labor force, population, commercial and retail real estate trends, taxable sales, and other related metrics. The main selection criteria for each data series was the frequency of publication, time lag, availability, and level of detail. The industrial and geographic detail were considered crucial as businesses will respond differently to changes in the road network based on their proximity to I-64 and the industry reliance on transportation. To gauge the impacts from I-64 reconstruction, comparisons focused on: a) time series trends (before, during, after); b) sub-county economic trends; and c) metropolitan area and U.S.-level macroeconomic conditions.

Business Surveys and Interviews

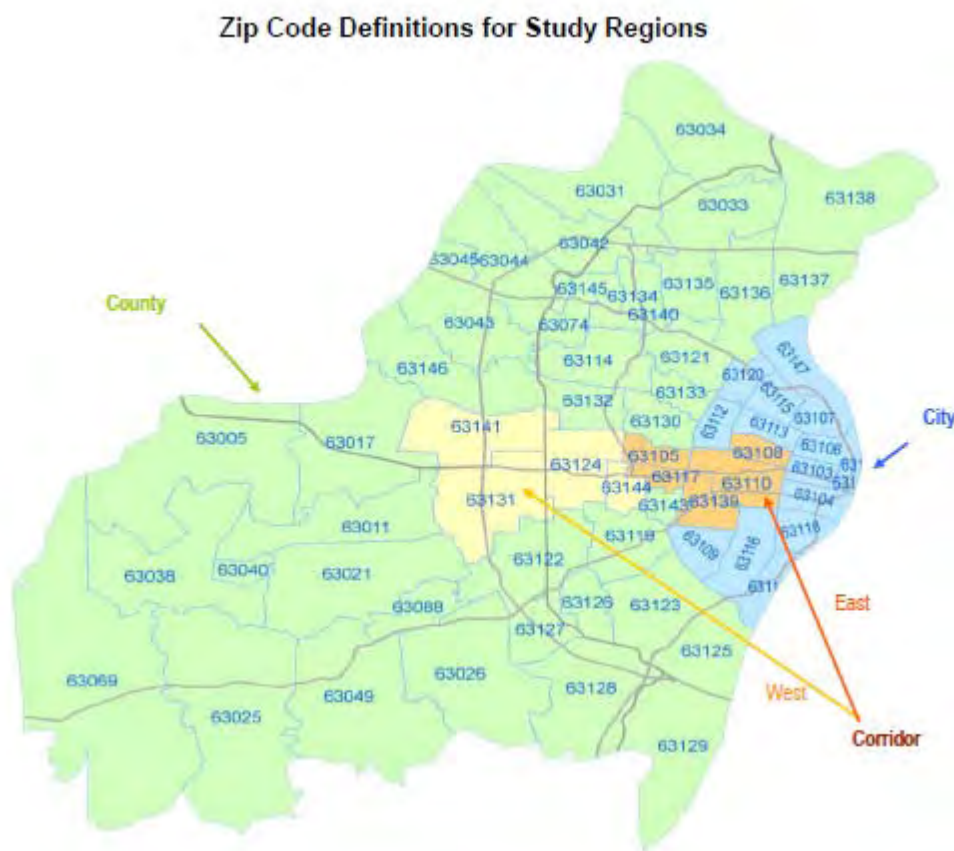
The business surveys were conducted to specifically target the business climate and economic conditions. The surveys were distributed, with the help of local business associations, to businesses within St. Louis City and County. The first survey's questions were directed at conditions just prior to the initial closure of the western portion of I-64, as well as the changes following the closure. The three main areas the survey focused on are related to: 1) Transportation Costs, 2) Sales and Visitation, and 3) Commuting Impacts. Certain questions also pertained to the level of satisfaction with alternative routes and MoDOT's delivery of the I-64 project. The second business survey was released shortly before the transition from the Western to Eastern closure. The second business survey's questions were similar to those of the first survey to track changes in business behavior, satisfaction, commuting, and overall costs.

¹ "Interstate 64 Business Climate Report Pre-Construction Analysis" April 2006

As a supplement to the business survey, HDR conducted follow-up, in-depth interviews with transportation-dependent businesses in and near the I-64 corridor. During the interview process 12 separate businesses from varying industries were interviewed via telephone to determine how: businesses prepared for the closure, commuters were impacted, transportation costs were affected, if new policies were implemented, and if outreach with employees, clients, and patients was successful. Different industry groups were targeted, to gauge how similar industries are being impacted, which are more susceptible, and the steps businesses are taking to cope with the closure.

Economic Data Indicators

The economic data collected and reported through this study was designed to be consistent with the “Interstate 64 Business Climate Report: Pre-Construction Analysis” (2006). Given the nature of the project and the required level of detail, the research team employed a “bottom up” analysis approach using detailed ZIP-code-level data for the I-64 corridor. The map below illustrates the ZIP code definitions for each region, including those composing the I-64 Corridor. The published economic data collected covers: jobs, wages, number of establishments, and taxable sales by industry type. Real estate, household, and other demographic information are being collected in addition to the industry based data to capture the total impacts to the region. Throughout this report, the terms “corridor” and “non-corridor” will be used to describe aggregations of the data. “Corridor” refers to the regions labeled “East” and “West” below, while “non-corridor” refers to the balance of the map below, labeled “County” and “City”.



Data Concepts and Sources

Employment, Wages, and Establishment Statistics

The “Quarterly Census of Employment and Wages” (QCEW) dataset is compiled by MERIC covering employment, wages, and the number of establishments by industry. It is publicly available at the county level. Specific to this evaluation study and the need to track sub-county corridor-level conditions, the research team has reached an agreement with MERIC to create custom tabulations of the QCEW at the zip-code level for the two-digit NAICS industries. The standard QCEW has few data suppressions at both the City and County level. The most recent release for both St. Louis County and St. Louis City is the Fourth Quarter of 2008. Although the economic data is published on a quarterly basis, there is a lag of at least 3 months from collection and processing to its official release.

Unemployment Rate, Labor Force

MERIC’s Local Area Unemployment Statistics (LAUS) covers labor force and subsequent unemployment rates for each county, city, and MSA within the state. These estimates are derived from historical data, the CES program, and the Unemployment Insurance System (UI). The data is reported monthly for all geographical areas (excluding ZIP code level) typically on a 3-month lag. The last reported month was March 2009. The LAUS dataset is preferred to National data sources, as MERIC reports this information directly to the Bureau of Labor Statistics (BLS) for their unemployment estimates.

Population

The population estimates program by the U.S. Census Bureau publishes demographic data for the nation, state, cities, and towns. Estimates for the total population are available for both the City and County up to 2008; these estimates were released in 2008. The reference date for all census estimates is always July 1st. Census population data and estimates are the most commonly cited and available demographic data for the US. With each new July 1st release, the Census Bureau revises previous historical estimates. The population data to date has been collected, and will be reported periodically.

Taxable Sales

Missouri Department of Revenue (MoDOR) reports Quarterly Taxable Sales by ZIP code (currently available up to and including the fourth quarter of 2008) which is used to track consumer/retail spending and overall economic activity at a detailed geographic level. The Taxable Sales by City dataset also separates taxable sales for each individual industry via the Standard Industrial Codes (SIC) at the two-digit level. Since 1997, most have adopted the North American Industrial Classification System (NAICS) classifications for reporting business related economic data, which presented a minor challenge as MoDOR’s data is still tabulated using the older SIC classifications. Comparing the taxable sales data by ZIP code with the geographic detail allows an examination of the direct sales impacts on the I-64 Corridor.

Real Estate

The “I-64 Business Climate Report: Pre-Construction Analysis” used a custom tabulation provided by the Torto Wheaton Research Group (TWR). TWR data included annual estimates for industrial building gross rental asking price, availability, net absorption, and stock for St. Louis City, St. Louis County, and the I-64 Corridor. The TWR data is a fee-based service that HDR is currently acquiring. Alternative and supplemental data sources were sought out prior to

acquiring the TWR dataset. For commercial and office real estate data at the Metro level, the research team referenced quarterly reports from CB Richard Ellis. On the residential side, the National Association of Homebuilders (NAHB) reports the volume of building permits for single and multi-family units both at the region and nation.

Data Trends – Baseline and Current Conditions

The collection and synthesis of the published economic data was performed primarily to be consistent with the previous “Pre-Construction” report of the I-64 region. The economic concepts were collected and tracked since the “Pre-Construction” analysis through the Western closure to create a baseline of conditions before the closure throughout the project to completion. Since the data is available at the ZIP code geographic level, these results can be compared at the corridor level, like the business surveys. Table 1 shows the major economic concepts for 2008 and Table 1a shows the same indicators for 2007. In terms of employment, both the corridor and non-corridor regions saw a decline in jobs for the third quarter of 2008; however, this dip in employment is consistent with historical trends. The table also shows a decline in employment for the non-corridor region and a rise in taxable sales for each region. Looming large in any analysis of economic trends in 2008 is the economic slowdown as the nation officially began its current recession in December 2007, according to the National Bureau of Economic Research.

Table 1: Major Economic Data Concepts – 2008

	1st Quarter 2008		2nd Quarter 2008		3rd Quarter 2008		4th Quarter 2008	
	Corridor	Non-Corridor	Corridor	Non-Corridor	Corridor	Non-Corridor	Corridor	Non-Corridor
Jobs	200,772	616,400	201,577	631,271	200,533	627,295	202,055	619,160
Number of Establishments	9,232	31,155	9,197	31,131	9,178	31,256	9,185	31,134
Wages (\$ Millions)	\$ 2,705	\$ 7,413	\$ 2,555	\$ 7,193	\$ 2,453	\$ 7,028	\$ 2,727	\$ 8,950
Total Taxable Sales (\$ Millions)	\$ 833	\$ 3,977	\$ 914	\$ 4,226	\$ 888	\$ 4,096	\$ 941	\$ 4,152

Table 2a: Major Economic Data Concepts – 2007

	1st Quarter 2007		2nd Quarter 2007		3rd Quarter 2007		4th Quarter 2007	
	Corridor	Non-Corridor	Corridor	Non-Corridor	Corridor	Non-Corridor	Corridor	Non-Corridor
Jobs	197,088	622,930	201,778	636,941	201,242	628,136	205,271	632,136
Number of Establishments	9,465	31,362	9,482	31,426	9,405	31,445	9,333	31,318
Wages (\$ Millions)	\$ 2,521	\$ 7,225	\$ 2,385	\$ 7,055	\$ 2,471	\$ 6,754	\$ 2,785	\$ 7,541
Total Taxable Sales (\$ Millions)	\$ 891	\$ 4,028	\$ 950	\$ 4,315	\$ 928	\$ 4,168	\$ 1,016	\$ 4,420

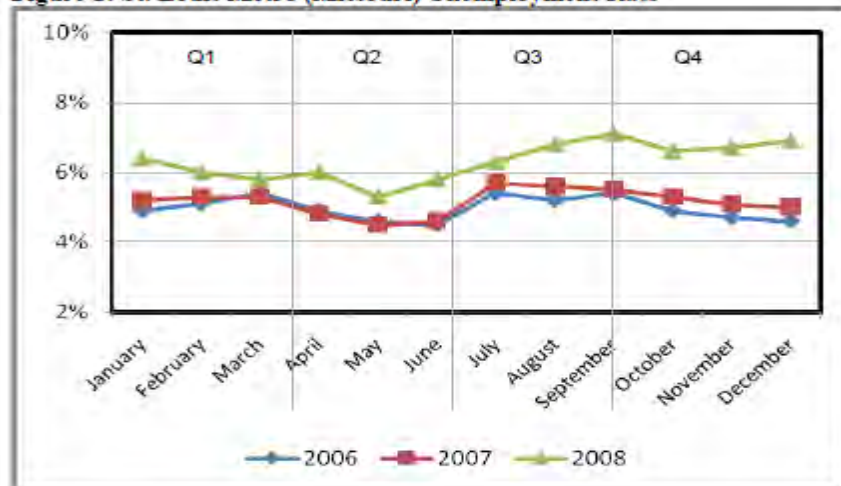
Sources: QCEW and MO Department of Revenue

Employment

As of fourth quarter 2008, the total employment for the study area was 821,215 of which 25 percent are concentrated in the corridor region. Traditionally, employment trends for the region show rise in employment in the second quarter, a small contraction in the 3rd quarter, and a rebound in the fourth quarter. Throughout 2008, employment levels followed the overall seasonal trends with the exception of the fourth quarter. Despite growth in employment in the corridor region, the losses in the non-corridor region resulted in a 0.8 percent decline in overall employment.

Figure E-1 shows the monthly unemployment trends for the St. Louis, MO metro for 2006 through 2008. The seasonal unemployment trends hold for each year; however, after June of 2007 the unemployment rates are greater compared to the previous year. This steady rise in unemployment has been consistent with national unemployment trends.

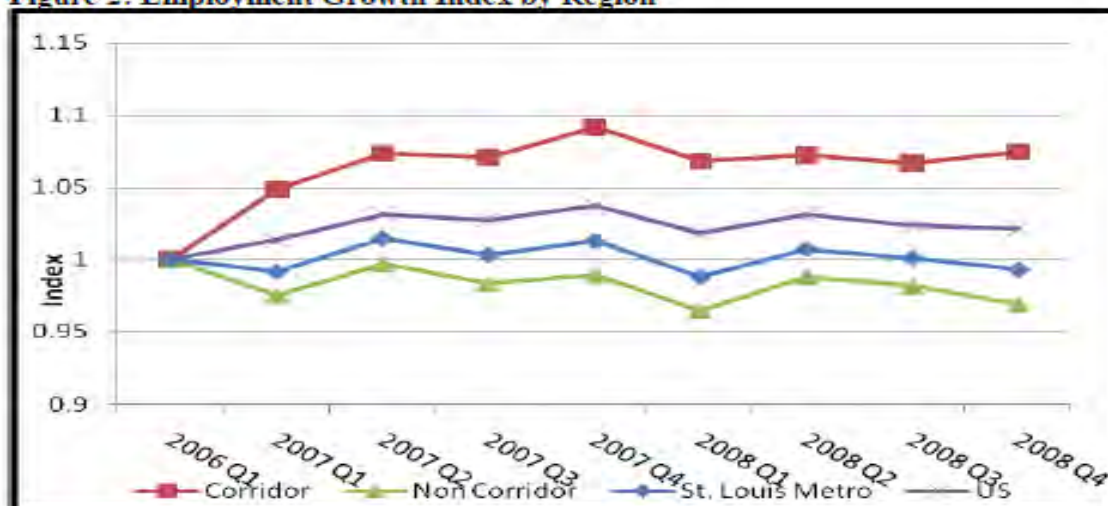
Figure 1: St. Louis Metro (Missouri) Unemployment Rate



Source: MERIC LAUS

The overall employment growth for the St. Louis region shows a similar trend to the unemployment rate, as seen in the employment growth index (Figure E-2). The growth index demonstrates the change in employment from the first quarter of 2006 that serves as the baseline indicator (greater than 1 shows increase and less than 1 show decrease). The graph depicts positive growth from first quarter of 2007 through the fourth quarter of 2007 for the corridor and non-corridor regions. Employment growth declined in the first quarter of 2008 for the corridor and growth for the non-corridor fell below 2006 levels. Although the corridor region maintains a steady positive growth, it is only 25% of the total employment for the region, and therefore the effects of the non-corridor's decline displace the marginal gains in the corridor region.

Figure 2: Employment Growth Index by Region



Source: MERIC QCEW

Figure E-3 shows the share of employment by industry for the entire region, where the majority of jobs are in education and health care; management and administration; arts, accommodation and recreation; and retail. The corridor region has a heavy concentration in business institutions (i.e. finance and real estate), which surprisingly showed very stable growth throughout 2007 until fourth quarter 2008, where finance and real estate employment declined by 2 percent. In addition, the high percentage of health care within the corridor is unique as its services are generally critical for residents and have limited or no substitutes. The high concentration of hospitals and health care establishments in the corridor, and the unique nature of the health care services contribute to maintaining positive employment growth in the corridor².

Figure 3: Employment by industry share St. Louis MO Metro



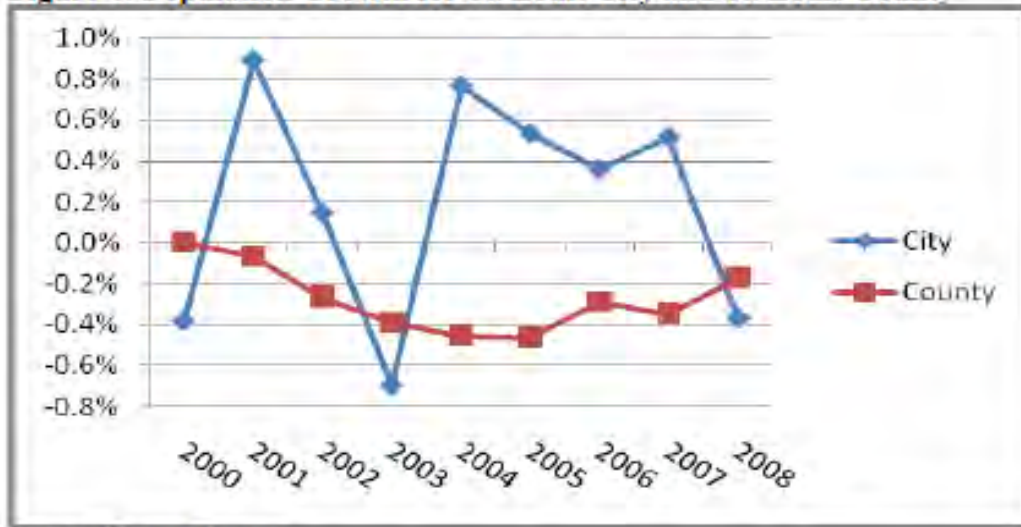
Source: MERIC QCEW

Population

St. Louis County's population in 2008 of 991,830 is more than double of St. Louis City's population of 354,360. Although the City and County are adjacent to each other, the population trends have been different. The City has demonstrated positive growth from 2004 through 2007, while the County has seen a steady decline in overall population from its peak in 2000, as seen Figure E-4. Although the County's population trend is demonstrating negative growth, the decline is less than one-half of a percent per year and has not shown any fluctuation since the start of the I-64 project. However, the City's growth rate shifted from positive to negative growth in 2008; this demographic response is likely related to economic conditions rather than the closure of I-64.

²Business Surveys and Interviews confirmed that hospital patients and activities were unaffected by I-64

Figure 4: Population Growth for St. Louis City and St. Louis County

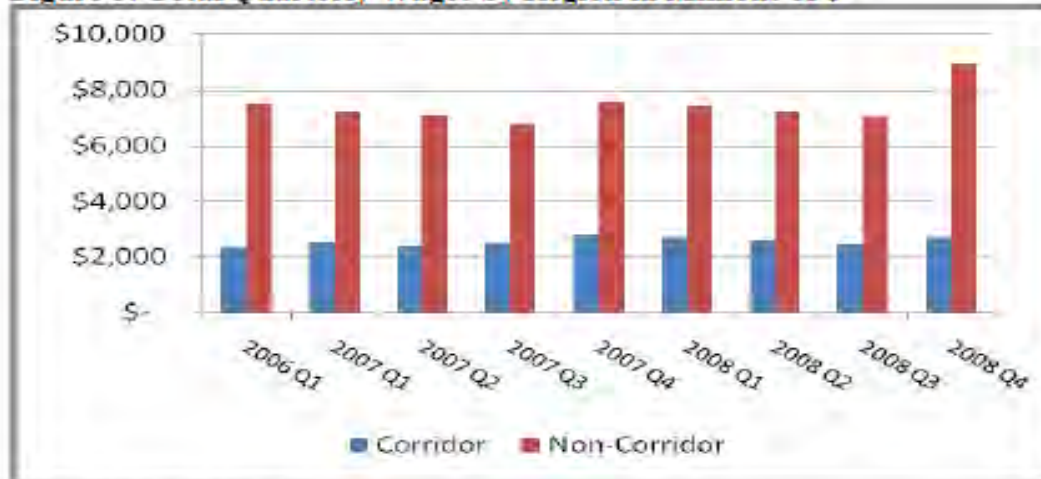


Source: Census Bureau

Wages

Similar to employment, the MERIC QCEW wage data is provided at the ZIP code and industry level. At the geographic level, the 9-ZIP-code corridor region generates upwards of 23% of the total wages of the entire region, totaling \$2.7 billion in the fourth quarter of 2008. The much larger non-corridor region generated \$8.9 billion in wages. Seasonal trends are evident in the wage data for the years 2007 and 2008, as the wages declined from the first quarter through the third quarter of the year and then recovered in the fourth quarter. National economic pressures, however, have placed more downward pressure on wages across both regions; however the data suggests there is an increase in fourth quarter 2008 wages. This substantial increase in fourth quarter 2008 wages is attributable to additional compensation (year-end bonuses, profit-sharing and firm buyout payments) that represents a unique one-time payment and account for the large wage variation from the previous quarter. Net of these additional compensation payments, the non-corridor would have still demonstrated positive growth from third quarter 2008, albeit at a much smaller rate.

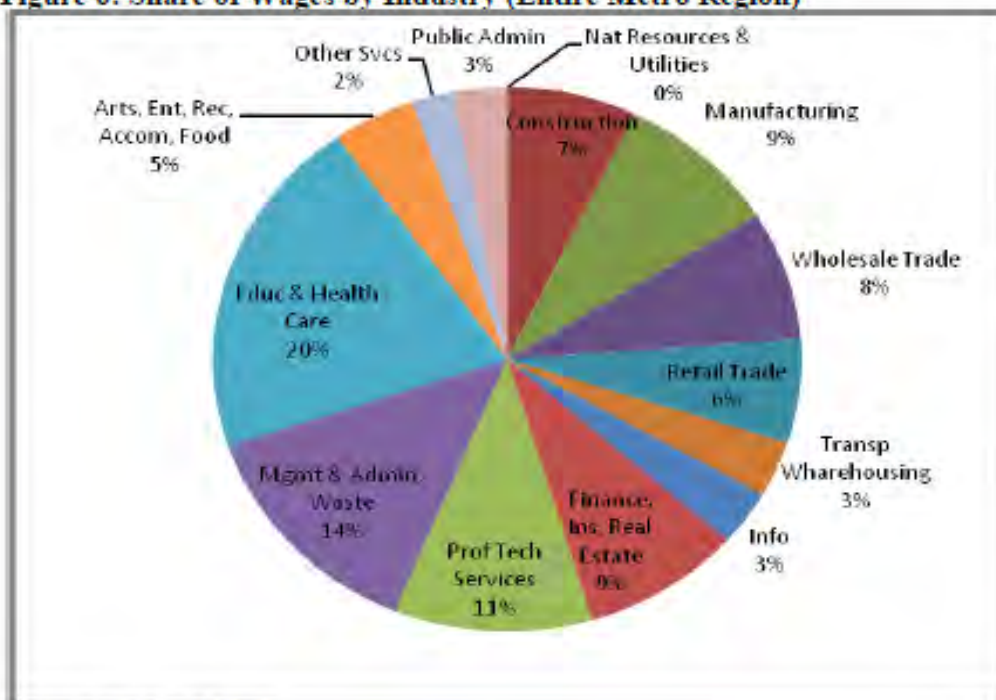
Figure 5: Total Quarterly Wages by Region in Millions of \$



Source: MERIC QCEW

Service-based industries account for over half of the wages distributed. Health care and education are the largest contributors to wages in the region, providing over 20 percent, as shown in Figure E-6. Wholesale trade and retail trade contribute 14 percent of the total wages to the region, which is less than their share of the total employment, and implies that wholesale and retail trade pay lower wages per job on average. The same is true of the arts, recreation, entertainment, and food service industries, where the share of wages is 6 percentage points lower than the share of employment.

Figure 6: Share of Wages by Industry (Entire Metro Region)

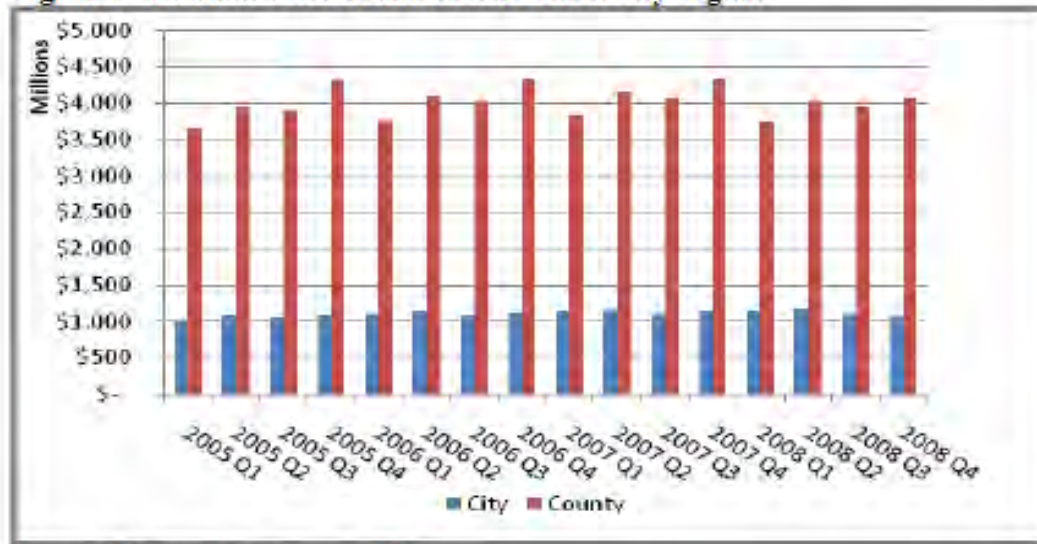


Source: MERIC QCEW

Taxable Sales

Taxable sales is a dynamic method of tracking economic performance, as taxable sales measure the amount of spending within the region with limited lag effects. These effects can be seen on the national scale as consumer spending has declined and savings has increased. The combined taxable sales for the City and County of St. Louis were \$5.1 billion for the fourth quarter of 2008. When compared on a year-on-year basis, the third quarter 2008 taxable sales revenues dropped \$350 million dollars from the fourth quarter of 2007. The graph below shows the total taxable sales for each quarter, from first quarter 2005 to fourth quarter 2008, in millions of dollars. As Figure E-7 indicates, the taxable sales for St. Louis County are roughly three and a half times larger than the taxable sales for St. Louis City.

Figure 7: Taxable sales in Millions of Dollars by region

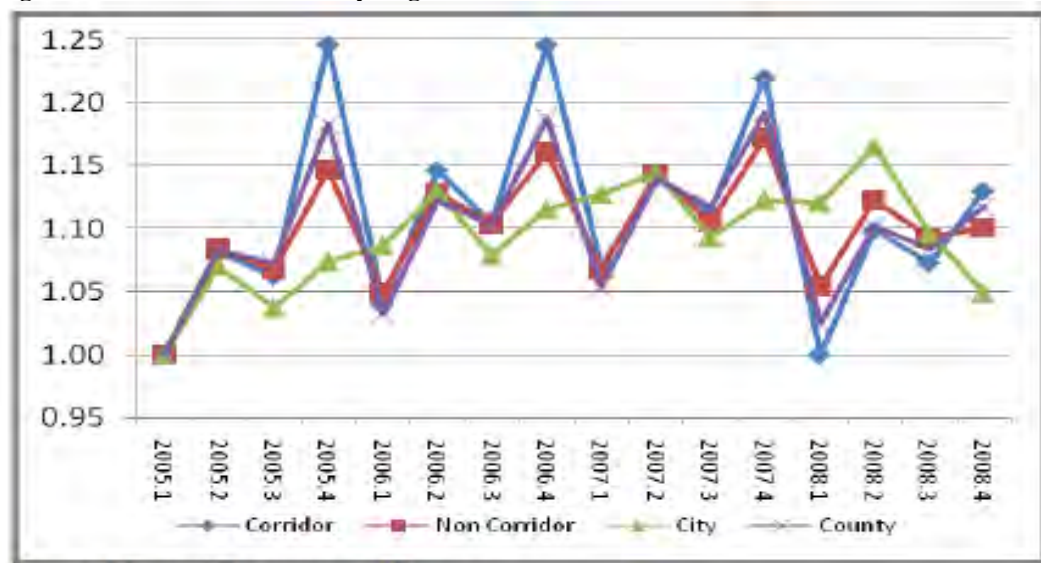


Source: Missouri Department of Revenue

The seasonal taxable sales patterns are best seen in the taxable sales growth index, Figure E-8. The index demonstrates quarterly taxable sales growth by each region in the study area. The index's baseline is the 1st Quarter of 2006 and is used to compare other Quarters in 2006, 2007 and 2008. A number greater than 1 means an increase taxable sales and a number less than 1 means a decrease taxable sales. Each year, sales follow a quarterly cycle where the lowest sales take place in the first quarter of the calendar year, the second and third quarter show some degree of recovery, and then the final quarter of the year has the largest sales, which are traditionally boosted by holiday spending. The overall growth for all regions followed a similar pattern, maintaining a consistent level of positive growth until 2007, where the fourth quarter 2007 growth fell short of the previous years, and was followed by a significant drop in taxable sales in first quarter 2008. The decline in sales for the corridor region was the most extreme and sales dropped back to 2005 levels, as seen in Figure 8. Although sales did recover over the course of 2008, they remained below 2006 levels; with the exception of St. Louis City for second quarter 2008.

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Figure 8: Taxable Sales Index by Region



Source: Missouri Department of Revenue

Although overall sales declined in 2008, individual industries were impacted differently (see appendix). For example, the taxable sales for food stores remained steady from 2005 through 2007 for all regions, but in 2008 purchases at food and grocery stores grew significantly compared to restaurants, suggesting a shift in consumer spending. Real estate sales in St. Louis began contracting in 2006 for both the City and County, consistent with national real estate and housing trends. Since then, real estate sales in St. Louis City have remained at roughly half of the first quarter 2005, while St. Louis County has returned to positive growth in the second half of 2008.

In terms of overall spending, St. Louis City appears to be the most impacted, with the corridor region showing effects immediately after the western closure of I-64. Since then, the corridor region has exhibited signs of recovery in the second and fourth quarters of 2008, and it is unlikely that these trends are due to the closure of I-64, but rather overall economic trends that began in December of 2007.

Real Estate

The office vacancy rates in the St. Louis metropolitan area have increased since the second quarter of 2007 to 14.57% and average office lease rates have fallen to \$18.39 per square foot from a high of \$20 per square foot. St. Louis ranks 25th in terms of its office vacancy rate compared to the major metropolitan areas in the US³, which is 10 percentage points greater than the national average. As for residential housing, the number of building permits for single-family housing in the St. Louis metro area has fallen, consistent with national trends⁴, but to a lesser degree. As of April 2008, building permits for single and multifamily housing in the St. Louis Metro were down by 44%, two percentage-points less than the national average. The reduction in housing permits, decline in construction and real estate jobs at the end of 2008, and contraction of wages for these industries are all evidence that the fluctuations in the national housing market have impacted St. Louis.

³ CB Richard Ellis

⁴ National Association of Homebuilders

Business Survey and Interviews

Interviews

HDR has conducted in-depth follow-up interviews with transportation-dependent businesses in and near the I-64 corridor. Different industry groups were targeted, with significant help from the St. Louis Regional Chamber and Growth Association (RCGA), to provide a detailed and in-depth range of private sector businesses that are being impacted adversely by the I-64 closure, and the steps businesses are taking to cope with the closure. At least one representative from the following local businesses and organizations has been interviewed in Table E-2.

Table 3: Industries Interviewed

Industry	Transportation Needs⁵	Employees⁶	Locations
Utilities	On-site technicians	1,000+	Multiple
Network Hospital	Patient access	1,000+	Multiple
Distributors	Freight shipments	<1,000	Multiple
Parcel Shippers	Freight shipments	1,000+	Multiple
Rental Car Agency	Customer access	<1,000	Multiple
Catering	Delivery	<50	Multiple
Research laboratories	Commuter access	1,000+	Multiple
Convention Center	Visitor access	<1,000	Single
Museum	Visitor access	<1,000	Single
Accommodation	Visitor access	<100	Single

The interviews found businesses expected the worst prior to the closure, but the conditions for the first quarter were not nearly as bad as they anticipated. To cope, many of the businesses with a large commuting labor force offered flex-time hours or telecommuting options, encouraged carpooling or public transit, and, in some cases, public transit passes. Businesses reported that impacts to peak commute times were largely negligible. In terms of operations, businesses with delivery schedules had planned for additional travel time per delivery into the impacted areas, but found that the additional delivery time was unnecessary. Onsite service industries, such as utilities, track emergency response time statistics and these statistics showed emergency response times were not impacted by the western closure.

Lastly, those interviewed were asked if they were satisfied with MoDOT's delivery of the I-64 project and how it has impacted sales, visitation, and operations. The interviews found that many businesses were pleased with the delivery of the project and support activities including: MoDOT's outreach and planning, the timing of traffic signals to improve traffic flow, and the amount of information available to the public.

Presentation with Economic Leaders

On June 17, 2008, the results of the first business survey were presented to local economic development leaders in St. Louis. The comments from the economic development leaders were consistent with the conclusions of the published economic data. Economic development leaders were concerned with current national economic conditions that were becoming evident in St. Louis, which were expected to make it difficult to isolate the impacts of I-64. The major concerns included the decline in available credit for businesses, high fuel prices, fluctuations in the housing market, the exchange rate and exports, all of which are points for the economic decline. The meeting also provided some positive feedback, similar to the interviews.

⁵ Please note commuter access was cited as a transportation need by all industries

⁶ Employee ranges are for non-disclosure purposes

Business Surveys

The two business surveys were created to evaluate the impacts and conditions business were experiencing due to the western and eastern closure of I-64. The survey questions were specifically designed to track conditions over time and determine the variations between the two separate closures. The first business survey was released on February 18, 2008, shortly after the western portion of I-64 was closed, and the second business survey was released on November 5, 2008 just before the reopening of the western closure.

Response

As the survey was online and specifically targeted for businesses rather than the general public, arrangements were made with the following local organizations to facilitate as many responses as possible: St. Louis Regional Chamber and Growth Association (RCGA), Regional Business Council (RBC), Downtown St. Louis Partnership, Civic Progress, and the St. Louis County Economic Council (SLCEC). The combined distribution list included 6,000 contacts from 3,600 various businesses. The survey was advertised and distributed via e-mail and newsletters with reminder notices urging members to participate in the online business survey. It is important to note that the 6,000 represented the total number of individual contacts in the combined distribution list, and therefore included duplicate entries and multiple contacts from the same business.

The first business survey received 369 separate and complete responses, while the second business survey received 84 responses. Although this is less than 10% of the total distribution list, there were additional obstacles that inhibited participation and completion of this web-based survey including: e-mail address spelling precision, spam filters, and internet content blockers. Previous web-based surveys have reported failure rates for survey invitations reaching potential respondents as low as 1% to 5% in well-defined samples and as high as 7% to 17% in less-than-well-defined samples⁷. Therefore, the final number of people receiving the survey e-mail was likely less than 6,000. The response rate for the second survey was much smaller, and therefore makes some of the comparisons between surveys difficult at a more detailed level. The research team attributes this reduction in completed surveys to: a) business complacency and acceptance regarding I-64; and b) larger economic concerns regarding the recession.

Profile of Businesses Responding

On a percentage basis, the businesses responding were fairly uniform in terms of the industry type and the number of employees. The first business survey did have a greater response rate which could be attributed to the concern from businesses and residents prior to the western closure. The first survey had relatively high representation of corridor-based businesses which could be indicative of their close proximity and relationship with the closed sections of I-64, possibly prompting and motivating such businesses to complete a survey. Respondents were asked how close they were to the western closure in miles, and for each survey over 70 percent of the total businesses responding were within 10 miles of the Western Closure.

⁷ Manfreda, Katja Lozar & Vehovar, Vasja "Survey Design Features Influencing Response Rates in Web Surveys" University of Ljubljana

Results

The table below summarizes some key statistics for each of the two surveys. As the table indicates, 86 percent of respondents were either satisfied or very satisfied at the time of the first survey, while 96 percent of those participating in the second survey were either satisfied or very satisfied with MoDOT's execution of the I-64 project.

Business Survey – Selected Results		
	1 st Survey	2 nd Survey
Total Distributed	6,000+	6,000+
Total Responses	369	84
Respondent location (based on zip code)		
Immediate I-64 region	23%	40%
Satisfaction w/ MoDOT execution of project		
Very satisfied	46%	56%
Satisfied	40%	40%
No Opinion	10%	0%
Dissatisfied	3%	4%
Very dissatisfied	1%	0%

Summary of survey results from key areas

Commuting Impacts

- The majority (56 percent) of businesses are experiencing limited effects on employee commuting behavior due to the closure. The first survey found 41 percent of the respondents indicated noticeably earlier or noticeably later commute times, while at the end of the western closure (second survey) respondents reported a 32 percent earlier or later commute.
- Eighty-one (81) percent of businesses surveyed are implementing, or have implemented, new commuter benefit programs. The large number of businesses who have implemented new commuter benefit programs may be correlated to “self-selection” as the businesses who are the most actively engaged in this type of activity may also be the ones most likely to respond to a survey on I-64.
- The second survey found 14 percent (down from 27 percent) of respondents reported a significant increase in commute time or cost. The majority of businesses reported a minor increase in commute time or cost.

Transportation Costs

- Both surveys found almost half of the businesses (44 percent for the first survey, 46 percent for the second) near the reconstruction are experiencing an increase in transportation costs. Of those businesses experiencing an increase in transportation costs, 49 percent reported an increase in freight shipping costs. This is an increase of 4 percentage points from the first survey.
- Despite almost half of the businesses reporting an increase in transportation costs, 10 percent of respondents from the first survey and one respondent from the second survey claimed to participate in the MoDOT outreach grant program. See <http://www.thenewi64.org/> for more information.

Sales, Visitation and Economic Activity

- The responses related to sales and visitation for both surveys found a decrease in sales and business activity. A greater number and percentage businesses outside of the corridor cited a lower volume in weekly sales.
- The first survey found 9 percent of all businesses cited a lower volume of weekly sales. This percentage jumped to 17 percent by the second survey.
- A slightly larger portion, 13 percent of all businesses, described a lower volume of weekly visitors or customers. Again the non-corridor respondents articulated a greater loss than the corridor businesses. The second survey found this percent jumped to 21 percent.

Post Closure Commute

Respondents were asked exactly how employee commute behavior has changed since January (Western section closed). Both surveys found corridor and non-corridor businesses were not experiencing major changes. The most frequently noted change was employees shifting their commute times to either earlier or later in the day. Coinciding with this trend, 36 percent of businesses offered flextime arrangements for employees with another 7 percent offering telecommuting options to mitigate the effects of I-64 reconstruction. A small portion of businesses, 10 percent (up from 8 percent) of respondents reported subsidizing employee's public transit expenses. The most dramatic shift from the first to the second survey was the decline in businesses offering telecommuting. This shift could be due to businesses overestimating the anticipated impacts before the closure and the perceived impacts after the closure being less disruptive.

Transportation Costs

Although the measurable commuter impacts to business respondents were relatively minor, respondents consistently noticed an increase in transportation costs. The first survey found a majority of respondents experienced a significant or minor increase in costs related to time travel and delay. Not surprisingly, respondents noted a rise in fuel costs, but this can be only indirectly related to I-64. While the rise in fuel costs per unit is apparent, the actual impacts related to I-64 are a result of longer distances traveled through detours around the closure or by an increase in stop-and-go traffic conditions. Reliability and travel delay are the major sources of the perceived transportation cost both exceeding the change in freight shipment costs. Corridor-based businesses reported changes consistent with businesses outside of the corridor, often to a lesser degree, especially in the case of freight costs. The industry mix is likely responsible for these differences.

Satisfaction

Following the closure, the level of satisfaction with the performance of I-64's closure and alternative routes were very high, especially when considering the number of businesses experiencing at least a minor rise in transportation costs. The response was almost identical across all regions as 86 percent or more felt that the alternative routes for the Western Closure provided reasonable access. The second business survey found that 96 percent those responding were either satisfied or very satisfied.

The results indicate that despite a rise in cost attributable to an increase in travel time, businesses are coping with the closure and are to a large extent satisfied with the project delivery and mitigation thus far. Although there have been proactive steps made by MoDOT and many of the local businesses, the sentiment still seems the same: travel delays and costs are higher but not enough (at this point) to warrant the implementation of drastic changes or cause major impacts. This conclusion is consistent with the small percentage of total businesses surveyed enrolled in MoDOT-sponsored outreach programs.

Sales and Visitors

The second survey found that over 80 percent of businesses reported the change in customers, visitors, and patients were either not relevant or not noticeable. However, 17 percent of responding businesses (down from 20 percent) did report a decline in visitor, patient, and customer volumes compared to previous seasons as seen in Table 4. Although the majority of businesses are still reporting no change in customers or sales, the level of awareness remains high, as the second survey discovered a larger percentage of businesses that are seeing a lower volume in sales and customers. See Table E-4 for a breakdown of changes in weekly sales and customers reported for each survey.

Table 4: Change in Weekly Sales & Customers

	First Survey		Second Survey	
	Sales	Customers	Sales	Customers
Lower Volume	9%	12%	17%	21%
Higher Volume	1%	1%	1%	1%
No Change	57%	60%	58%	54%
Not Relevant	33%	26%	24%	24%
Total	100%	100%	100%	100%

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Conclusions

Communications

The Western closure had a noticeable impact on respondent behavior. A sizeable minority of respondents are reporting changes in their shopping and driving habits. Many respondents report their daily commute now takes longer than before the closure. However, despite these changes, the majority of respondents are satisfied with how they are able to get around St. Louis with the closure. Further, the overwhelming majority of respondents are satisfied with MoDOT's decision to close parts of I-64 for two years instead of taking 6-8 years with lane closures (76.5% in the lowest measurement, 93.8% in the highest). Overall, the respondents have high level of satisfaction with how the I-64 closure has been handled with results ranging from 76.7% to 87.8%. **Considering the reported changes in respondents' behavior, these are extremely high levels of satisfaction and reflect the public consensus that this project was well planned and is being well managed.**

The Appendix to this report contains complete survey information for the online, mailed and in-person surveys conducted in 2008 for reference

Mobility

Based on these results, the following preliminary mobility conclusions can be made:

- Volumes along I-64 west of I-270 decreased by approximately 10,000 to 15,000 vehicles per day. East of I-170, traffic volumes decreased by over 50,000 vehicles. As I-64 traverses through downtown St. Louis, decreases of 10,000 to 15,000 vehicles per day were observed.
- Based on the Traffic.com data, it appears that volumes along I-70 have slightly decreased west of I-170, while slightly increasing east of Kingshighway Boulevard.
- Traffic volumes along I-270 south of I-64 have increased by 30,000 to 40,000 vehicles per day. This trend continued through the entire timeframe of the closure.
- I-44 became a key alternative east-west route with increases in traffic volumes ranging from 24,000 vehicles per day east of I-270 at Lindbergh Blvd and as high as 7,000 vehicles per day near Jefferson Ave.
- I-170 became a key route that connected several of the arterial roadways throughout the region. South of Page Avenue, volume increases of 20,000 to 30,000 vehicles per day were observed. Just north of I-64, volume increases of around 8,000 vpd were observed.
- Travel speeds dropped slightly and travel times increased (on major designated alternate routes 2 to 8%) slightly along the region's freeway network in conjunction with slight increases in traffic volumes.
- Parallel arterial routes also experienced significant increases in traffic volume and travel time. East-west arterial corridors closely located along the I-64 corridor like Clayton Road and Ladue Road, realized increases of between 10,000 and 20,000 vehicles per day.
- Forest Park Parkway experienced an increase of approximately 8,000 vehicles per day. The increase during the first few months of the eastern closure appears to be considerably higher.

Based on these results, the following preliminary safety conclusions can be made:

- Compared to year 2007, the number of crashes in 2008 slightly increased in the routes such as I-70 (4%), I-44 (4%) , I-55 (5%) and MO 100 (6%) whereas the number decreased in the routes such as I-270, I-170, MO 340, US40/I-64 and MO141. Other routes almost stayed at the level same.
- It is found that the crash increase on I-70 in 2008 was partly due to the record breaking heavy rain in 2008. This finding is confirmed by figure S-37 (Appendix page 57) showing the increasing trend of the out-of-control crashes on the same highway in 2008.
- In cases of MO100 or I-70, the increasing trend started before the I-64 closure (i.e., before 2008). So, it is hard to imply whether the I-64 closure causes the crash to increase.
- Although each route shows its own trend, the overall crashes on all three types of highways (i.e., interstate, MO, and US highways) have decreased in 2008.
- The observational inspections conducted in this study leads us to a tentative conclusion that there is no strong evidence proving that I-64 closure contributed to the crash increase on the highways that are potentially influenced by the closure. Continuation of this crash analysis through 2009 and 2010 will provide additional information that will either confirmed the tentative conclusion or provide information that changes this initial conclusion.

Economics

National and Metro area economic conditions

Since the housing and credit crisis emerged, national economic conditions have been in decline as economic activity has been weakening across most industry sectors and metropolitan regions in the US. Gross Domestic Product (GDP) fell 6.3 percent for the fourth quarter 2008 with exports, housing, and business investment continuing to decline. The residential and commercial real estate markets are deteriorating in conjunction with the construction industry. In addition, lending activity has declined⁸. The weakening conditions have impacted the labor market as unemployment levels rose throughout 2008.

Consumer spending demonstrated shifts in most metro areas as discount stores showed greater performance, luxury item purchases declined, and vehicle sales dropped in most Federal Reserve Districts, including St. Louis. Non-residential investment declined 36.9 percent fourth quarter 2008, while residential investment fell over 20 percent for each of the last two quarters of 2008⁹. Although consumer spending has declined nationally for most of 2008, 2009 is showing the first signs of positive growth as consumer spending rose 1.5 percent¹⁰. Clearly these trends have spread to most metropolitan areas and therefore are applying pressure to industry and labor markets.

⁸ “Current Economic Conditions” by Federal Reserve District

⁹ Bureau of Economic Analysis, National Economic Accounts - May 2009

¹⁰ Bureau of Economic Analysis, National Economic Accounts - May 2009

Looking ahead

The overall economic impacts measured in terms of jobs, sales and business perceptions thus far appear to be modest, with a few exceptions, and the overall level of business satisfaction with the I-64 reconstruction project is high thus far. Businesses surveyed are coping with higher transport costs mostly attributable to travel cost (i.e. increased gas prices, delays, etc.) and seem to be less concerned with the I-64 closure than with overall economic conditions.

Looking forward, another businesses survey will be conducted to determine if the initial reactions to the eastern closure are consistent over the long term, and how they compare to the western closure. The third business survey will likely be released in the fourth quarter of 2009. Data from Torto Wheaton Research (TWR) will be obtained to better understand the commercial real estate market. Lastly, the research team will quantify the changes to highway user costs that have resulted in changes in traffic, travel delay, and vehicle miles traveled (VMT).

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11. Business Interviews – Commuter access was mentioned as a “Transportation Need” by all industries surveyed

12. Business Interviews – Employee ranges are for non-disclosure purposes

13. “Addendum to the 1997 Federal Highway Cost Allocation Study Final Report” Federal Highway Administration May 2000

APPENDIX A

SURVEY RESULTS

APPENDIX A - 2008 Survey Numbers

Online Survey	1,362	
Motorist Assist	3,472	
Mailed Survey	<u>776</u>	
	5,610	Total people surveyed regarding Western Closure

APPENDIX A - MOTORIST ASSIST AND I-64 TRAFFIC RESPONSE RESULTS

Traffic Response

Motorist Assist

Total

3784

64move					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	skipped	47	6.2	6.2	6.2
	-	32	4.2	4.2	10.5
	--	10	1.3	1.3	11.8
	?	81	10.7	10.7	22.5
	+	325	43.0	43.0	65.6
	++	260	34.4	34.4	100.0
	Total	755	100.0	100.0	
		708			

64decision					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		63	8.3	8.3	8.3
	-	27	3.6	3.6	11.9
	--	7	.9	.9	12.8
	?	95	12.6	12.6	25.4
	+	232	30.7	30.7	56.2
	++	331	43.8	43.8	100.0
	Total	755	100.0	100.0	

64move					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		265	8.7	8.7	8.7
	-	181	6.0	6.0	14.7
	--	60	2.0	2.0	16.7
	?	553	18.3	18.3	35.0
	+	1137	37.5	37.5	72.5
	++	833	27.5	27.5	100.0
	Total	3029	100.0	100.0	
		2764			

64decision					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		314	10.4	10.4	10.4
	-	91	3.0	3.0	13.4
	--	48	1.6	1.6	15.0
	?	534	17.6	17.6	32.6
	+	894	29.5	29.5	62.1
	++	1148	37.9	37.9	100.0
	Total	3029	100.0	100.0	

How satisfied are you with how well you are managing to move around the St. Louis area with the closure of I-64?

Very Dissatisfied	70	Total Dissatisfied	283	10.0%
Dissatisfied	213	Total Satisfied	2555	90.0%
No Opinion	634		2838	
Satisfied	1462			
Very Satisfied	1093			
	3472			
	3472			

How satisfied are you with the decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?

Very Dissatisfied	55	Total Dissatisfied	173	6.2%
Dissatisfied	118	Total Satisfied	2605	93.8%
No Opinion	629		2778	
Satisfied	1126			
Very Satisfied	1479			
	3407			

APPENDIX A - MAILED SURVEY RESULTS

Frequencies

[DataSet1] D:\Heartland\Projects and Proposals\MoDOT\I-64 Project\Mailed Survey\I-64 All Mailed Surveys.sav

Frequency Table

Mailing				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First Mailing	776	100.0	100.0

the closure has changed where I shop					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	66	8.5	9.0	9.0
	Agree	128	16.5	17.4	26.4
	Disagree	222	28.6	30.2	56.6
	Strongly Disagree	247	31.8	33.6	90.2
	No Opinion	72	9.3	9.8	100.0
	Total	735	94.7	100.0	
Missing	System	41	5.3		
Total		776	100.0		

the closure has changed where I buy gas					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	23	3.0	3.1	3.1
	Agree	34	4.4	4.6	7.7
	Disagree	262	33.8	35.5	43.2
	Strongly Disagree	332	42.8	44.9	88.1
	No Opinion	88	11.3	11.9	100.0
	Total	739	95.2	100.0	
Missing	System	37	4.8		
Total		776	100.0		

the closure has changed where I bank					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	15	1.9	2.0	2.0
	Agree	14	1.8	1.9	3.9
	Disagree	261	33.6	35.5	39.5
	Strongly Disagree	363	46.8	49.4	88.8
	No Opinion	82	10.6	11.2	100.0
	Total	735	94.7	100.0	
Missing	System	41	5.3		
Total		776	100.0		

the closure has changed how often I eat out					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	42	5.4	5.7	5.7
	Agree	100	12.9	13.6	19.4
	Disagree	230	29.6	31.4	50.8
	Strongly Disagree	289	37.2	39.4	90.2
	No Opinion	72	9.3	9.8	100.0
	Total	733	94.5	100.0	
Missing	System	43	5.5		
Total		776	100.0		

the closure has changed how often I travel to certain areas					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	174	22.4	23.4	23.4
	Agree	244	31.4	32.8	56.3
	Disagree	128	16.5	17.2	73.5
	Strongly Disagree	149	19.2	20.1	93.5

the closure has changed where I shop

	Frequency	Percent
Strongly Disagree	247	37.3%
Disagree	222	33.5%
Agree	128	19.3%
Strongly Agree	66	10.0%
Total	663	

the closure has changed where I shop

Total Disagree	469	70.7%
Total Agree	194	29.3%
Total	663	

the closure has changed where I buy gas

	Frequency	Percent
Strongly Disagree	332	51.0%
Disagree	262	40.2%
Agree	34	5.2%
Strongly Agree	23	3.5%
Total	651	

the closure has changed where I buy gas

Total Disagree	594	91.2%
Total Agree	57	8.8%
Total	651	

the closure has changed where I bank

	Frequency	Percent
Strongly Disagree	363	55.6%
Disagree	261	40.0%
Agree	14	2.1%
Strongly Agree	15	2.3%
Total	653	

the closure has changed where I bank

Total Disagree	624	95.6%
Total Agree	29	4.4%
Total	653	

the closure has changed how often I eat out

	Frequency	Percent
Strongly Disagree	289	43.7%
Disagree	230	34.8%
Agree	100	15.1%
Strongly Agree	42	6.4%
Total	661	

the closure has changed how often I eat out

Total Disagree	519	78.5%
Total Agree	142	21.5%
Total	661	

the closure has changed how often I travel to certain areas

	Frequency	Percent
Strongly Disagree	149	21.4%
Disagree	128	18.4%
Agree	244	35.1%
Strongly Agree	174	25.0%

Total Disagree	277	39.9%
Total Agree	418	60.1%
Total	695	

	No Opinion	48	6.2	6.5	100.0
Missing	Total	743	95.7	100.0	
	System	33	4.3		
Total		776	100.0		

the closure has changed where I work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	12	1.5	1.6	1.6
	Agree	14	1.8	1.9	3.5
	Disagree	214	27.6	29.2	32.7
	Strongly Disagree	390	50.3	53.2	85.9
	No Opinion	103	13.3	14.1	100.0
	Total	733	94.5	100.0	
Missing	System	43	5.5		
Total		776	100.0		

the closure has changed where I live					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	1.3	1.4	1.4
	Agree	11	1.4	1.5	2.9
	Disagree	206	26.5	28.5	31.4
	Strongly Disagree	417	53.7	57.8	89.2
	No Opinion	78	10.1	10.8	100.0
	Total	722	93.0	100.0	
Missing	System	54	7.0		
Total		776	100.0		

No - I still work the same hours in the same location as I did before the closure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	569	73.3	100.0	100.0
Missing	System	207	26.7		
Total		776	100.0		

Yes - My hours have shifted					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	61	7.9	100.0	100.0
Missing	System	715	92.1		
Total		776	100.0		

Yes - I now work from another location (home, another office, etc.) more often					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	3.2	100.0	100.0
Missing	System	751	96.8		
Total		776	100.0		

Yes - I quit my job and accepted one somewhere else					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	.5	100.0	100.0
Missing	System	772	99.5		
Total		776	100.0		

Yes - Other					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	47	6.1	100.0	100.0
Missing	System	729	93.9		
Total		776	100.0		

How well the public has been kept informed about the New I-64 Project					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	348	44.8	45.8	45.8

Total 695

the closure has changed where I work

	Frequency	Percent
Strongly Disagree	390	61.9%
Disagree	214	34.0%
Agree	14	2.2%
Strongly Agree	12	1.9%
Total	630	

the closure has changed where I work

Total Disagree	604	95.9%
Total Agree	26	4.1%
Total	630	

the closure has changed where I live

	Frequency	Percent
Strongly Disagree	417	64.8%
Disagree	206	32.0%
Agree	11	1.7%
Strongly Agree	10	1.6%
Total	644	

the closure has changed where I live

Total Disagree	623	96.7%
Total Agree	21	3.3%
Total	644	

Has the closure of this section of I-64 changed your work habits?

No - I still work the same hours in the same location as I did before the closure	569	73.3%
Yes - My hours have shifted	61	7.9%
Yes - I now work from another location (home, another office, etc.) more often	25	3.2%
Yes - I quit my job and accepted one somewhere else	4	0.5%
Yes - Other	47	6.1%
		91.0%

9.0% skipped question, some probably did not have jobs

How well the public has been kept informed about the New I-64 Project

	Frequency	Percent			
Very Dissatisfied	5	0.7%	Total Dissatisfied	37	5.1%

	Satisfied	334	43.0	44.0	89.9
	Dissatisfied	32	4.1	4.2	94.1
	Very Dissatisfied	5	.6	.7	94.7
	No Opinion	40	5.2	5.3	100.0
	Total	759	97.8	100.0	
Missing	System	17	2.2		
Total		776	100.0		

The timeliness of the New I-64 Project information being made available					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	278	35.8	36.8	36.8
	Satisfied	376	48.5	49.7	86.5
	Dissatisfied	37	4.8	4.9	91.4
	Very Dissatisfied	6	.8	.8	92.2
	No Opinion	59	7.6	7.8	100.0
	Total	756	97.4	100.0	
Missing	System	20	2.6		
Total		776	100.0		

How alternative travel options have been communicated					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	208	26.8	27.7	27.7
	Satisfied	383	49.4	51.1	78.8
	Dissatisfied	75	9.7	10.0	88.8
	Very Dissatisfied	17	2.2	2.3	91.1
	No Opinion	67	8.6	8.9	100.0
	Total	750	96.6	100.0	
Missing	System	26	3.4		
Total		776	100.0		

The traffic flow within construction work zones (other construction where you may travel)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	120	15.5	16.0	16.0
	Satisfied	358	46.1	47.8	63.8
	Dissatisfied	107	13.8	14.3	78.1
	Very Dissatisfied	42	5.4	5.6	83.7
	No Opinion	122	15.7	16.3	100.0
	Total	749	96.5	100.0	
Missing	System	27	3.5		
Total		776	100.0		

How understandable and accurate are the construction work zone signs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	125	16.1	16.9	16.9
	Satisfied	375	48.3	50.7	67.6
	Dissatisfied	126	16.2	17.0	84.6
	Very Dissatisfied	22	2.8	3.0	87.6
	No Opinion	92	11.9	12.4	100.0
	Total	740	95.4	100.0	
Missing	System	36	4.6		
Total		776	100.0		

How well you are managing to move around the St. Louis area with the New I-64 Project closure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	164	21.1	21.8	21.8
	Satisfied	424	54.6	56.3	78.1
	Dissatisfied	93	12.0	12.4	90.4
	Very Dissatisfied	31	4.0	4.1	94.6
	No Opinion	41	5.3	5.4	100.0
	Total	753	97.0	100.0	
Missing	System	23	3.0		
Total		776	100.0		

Dissatisfied	32	4.5%	Total Satisfied	682	94.9%
Satisfied	334	46.5%	Total	719	
Very Satisfied	348	48.4%			
Total	719				

The timeliness of the New I-64 Project information being made available					
	Frequency	Percent			
Very Dissatisfied	6	0.9%	Total Dissatisfied	43	6.2%
Dissatisfied	37	5.3%	Total Satisfied	654	93.8%
Satisfied	376	53.9%	Total	697	
Very Satisfied	278	39.9%			
Total	697				

How alternative travel options have been communicated					
	Frequency	Percent			
Very Dissatisfied	17	2.5%	Total Dissatisfied	92	13.5%
Dissatisfied	75	11.0%	Total Satisfied	591	86.5%
Satisfied	383	56.1%	Total	683	
Very Satisfied	208	30.5%			
Total	683				

The traffic flow within construction work zones (other construction where you may travel)					
	Frequency	Percent			
Very Dissatisfied	42	6.7%	Total Dissatisfied	149	23.8%
Dissatisfied	107	17.1%	Total Satisfied	478	76.2%
Satisfied	358	57.1%	Total	627	
Very Satisfied	120	19.1%			
Total	627				

How understandable and accurate are the construction work zone signs					
	Frequency	Percent			
Very Dissatisfied	22	3.4%	Total Dissatisfied	148	22.8%
Dissatisfied	126	19.4%	Total Satisfied	500	77.2%
Satisfied	375	57.9%	Total	648	
Very Satisfied	125	19.3%			
Total	648				

How well you are managing to move around the St. Louis area with the New I-64 Project closure					
	Frequency	Percent			
Very Dissatisfied	31	4.4%	Total Dissatisfied	124	17.4%
Dissatisfied	93	13.1%	Total Satisfied	588	82.6%
Satisfied	424	59.6%	Total	712	
Very Satisfied	164	23.0%			
Total	712				

The decision to complete the work by closing I-64 for 2 years instead of taking 6 to 8 years with lane closures					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	277	35.7	37.0	37.0
	Satisfied	301	38.8	40.2	77.3
	Dissatisfied	56	7.2	7.5	84.8
	Very Dissatisfied	45	5.8	6.0	90.8
	No Opinion	69	8.9	9.2	100.0
	Total	748	96.4	100.0	
Missing	System	28	3.6		
Total		776	100.0		

Your overall level of satisfaction with how the New I-64 Project closure has been handled					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	213	27.4	28.3	28.3
	Satisfied	405	52.2	53.8	82.1
	Dissatisfied	62	8.0	8.2	90.3
	Very Dissatisfied	24	3.1	3.2	93.5
	No Opinion	49	6.3	6.5	100.0
	Total	753	97.0	100.0	
Missing	System	23	3.0		
Total		776	100.0		

TV News					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	590	76.0	100.0	100.0
Missing	System	186	24.0		
Total		776	100.0		

Radio News					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	412	53.1	100.0	100.0
Missing	System	364	46.9		
Total		776	100.0		

Radio Talk Shows					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	135	17.4	100.0	100.0
Missing	System	641	82.6		
Total		776	100.0		

Newspapers					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	428	55.2	100.0	100.0
Missing	System	348	44.8		
Total		776	100.0		

Internet sites					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	292	37.6	100.0	100.0
Missing	System	484	62.4		
Total		776	100.0		

Receive information in mail (newsletter, etc.)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	165	21.3	100.0	100.0
Missing	System	611	78.7		
Total		776	100.0		

Project email from MoDOT or I-64 Team

The decision to complete the work by closing I-64 for 2 years instead of taking 6 to 8 years with lane closures

		Frequency	Percent		
Very Dissatisfied		45	6.6%	Total Dissatisfied	101
Dissatisfied		56	8.2%	Total Satisfied	578
Satisfied		301	44.3%	Total	679
Very Satisfied		277	40.8%		
Total		679			

Your overall level of satisfaction with how the New I-64 Project closure has been handled

		Frequency	Percent		
Very Dissatisfied		24	3.4%	Total Dissatisfied	86
Dissatisfied		62	8.8%	Total Satisfied	618
Satisfied		405	57.5%	Total	704
Very Satisfied		213	30.3%		
Total		704			

What is the best way for MoDOT to get information to you about road improvements and other road and bridge information?

TV News	590	76.0%
Radio News	412	53.1%
Radio Talk Shows	135	17.4%
Newspapers	428	55.2%
Internet Sites	292	37.6%
Receive information in mail	165	21.3%
Project email from MoDOT or I-64 Team	88	11.3%
Project display boards at public gatherings	63	8.1%
Road signs on other roads	305	39.3%
Road signs when I head toward the closed highway	367	47.3%
Word of Mouth (a friend tells me)	137	17.7%
Work	78	10.1%
Call 1-888-ASK-MODOT	64	8.2%
Call 511	45	5.8%
Other	14	1.8%
	410.2%	

totals exceed 100% because people could select more than one

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	88	11.3	100.0	100.0
Missing	System	688	88.7		
Total		776	100.0		

Project display boards at public gatherings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	63	8.1	100.0	100.0
Missing	System	713	91.9		
Total		776	100.0		

Road signs on other roads

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	305	39.3	100.0	100.0
Missing	System	471	60.7		
Total		776	100.0		

Road signs when I head toward the closed highway

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	367	47.3	100.0	100.0
Missing	System	409	52.7		
Total		776	100.0		

Word of Mouth (a friend tells me)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	137	17.7	100.0	100.0
Missing	System	639	82.3		
Total		776	100.0		

Work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	78	10.1	100.0	100.0
Missing	System	698	89.9		
Total		776	100.0		

Call 1-888-ASK-MODOT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	64	8.2	100.0	100.0
Missing	System	712	91.8		
Total		776	100.0		

Call 511

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	5.8	100.0	100.0
Missing	System	731	94.2		
Total		776	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	14	1.8	100.0	100.0
Missing	System	762	98.2		
Total		776	100.0		

Before closure: Driving alone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	85	11.0	12.1	12.1
	1 to 2 times per week	99	12.8	14.1	26.2
	3 to 4 times per week	83	10.7	11.8	38.0
	most weekdays	143	18.4	20.3	58.3
	almost every day	293	37.8	41.7	100.0

In a typical week, how often do you commute in the following ways?

Before closure: Driving alone

Before closure: Driving alone

		Frequency	Percent			Frequency	Percent
Valid	Never	85	12.1%	Valid	Never	85	12.1%
	1 to 2 times per week	99	14.1%		Rarely	99	14.1%
	3 to 4 times per week	83	11.8%		Most days	519	73.8%
	most weekdays	143	20.3%		Total	703	
	almost every day	293	41.7%				

Missing Total	Total System	703	90.6	100.0	
		73	9.4		
		776	100.0		

Before closure: Driving with multiple people					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	278	35.8	46.7	46.7
	1 to 2 times per week	194	25.0	32.6	79.3
	3 to 4 times per week	65	8.4	10.9	90.3
	most weekdays	30	3.9	5.0	95.3
	almost every day	28	3.6	4.7	100.0
	Total	595	76.7	100.0	
Missing	System	181	23.3		
Total		776	100.0		

Before closure: Riding the bus					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	508	65.5	92.7	92.7
	1 to 2 times per week	20	2.6	3.6	96.4
	3 to 4 times per week	7	.9	1.3	97.6
	most weekdays	6	.8	1.1	98.7
	almost every day	7	.9	1.3	100.0
	Total	548	70.6	100.0	
Missing	System	228	29.4		
Total		776	100.0		

Before closure: Riding MetroLink (light rail)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	480	61.9	86.5	86.5
	1 to 2 times per week	43	5.5	7.7	94.2
	3 to 4 times per week	11	1.4	2.0	96.2
	most weekdays	11	1.4	2.0	98.2
	almost every day	10	1.3	1.8	100.0
	Total	555	71.5	100.0	
Missing	System	221	28.5		
Total		776	100.0		

Before closure: Biking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	515	66.4	94.5	94.5
	1 to 2 times per week	18	2.3	3.3	97.8
	3 to 4 times per week	7	.9	1.3	99.1
	most weekdays	2	.3	.4	99.4
	almost every day	3	.4	.6	100.0
	Total	545	70.2	100.0	
Missing	System	231	29.8		
Total		776	100.0		

Before closure: Walking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	464	59.8	79.7	79.7
	1 to 2 times per week	69	8.9	11.9	91.6
	3 to 4 times per week	17	2.2	2.9	94.5
	most weekdays	9	1.2	1.5	96.0
	almost every day	23	3.0	4.0	100.0
	Total	582	75.0	100.0	
Missing	System	194	25.0		
Total		776	100.0		

Before closure: Telecommuting					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	502	64.7	92.3	92.3
	1 to 2 times per week	22	2.8	4.0	96.3
	3 to 4 times per week	5	.6	.9	97.2

Total703

Before closure: Driving with multiple people

	Frequency	Percent
Never	278	46.7%
1 to 2 times per week	194	32.6%
3 to 4 times per week	65	10.9%
most weekdays	30	5.0%
almost every day	28	4.7%
Total	595	

Before closure: Riding the bus

	Frequency	Percent
Never	508	92.7%
1 to 2 times per week	20	3.6%
3 to 4 times per week	7	1.3%
most weekdays	6	1.1%
almost every day	7	1.3%
Total	548	

Before closure: Riding MetroLink (light rail)

	Frequency	Percent
Never	480	86.5%
1 to 2 times per week	43	7.7%
3 to 4 times per week	11	2.0%
most weekdays	11	2.0%
almost every day	10	1.8%
Total	555	

Before closure: Biking

	Frequency	Percent
Never	515	94.5%
1 to 2 times per week	18	3.3%
3 to 4 times per week	7	1.3%
most weekdays	2	0.4%
almost every day	3	0.6%
Total	545	

Before closure: Walking

	Frequency	Percent
Never	464	79.7%
1 to 2 times per week	69	11.9%
3 to 4 times per week	17	2.9%
most weekdays	9	1.5%
almost every day	23	4.0%
Total	582	

Before closure: Telecommuting

	Frequency	Percent
Never	502	92.3%
1 to 2 times per week	22	4.0%
3 to 4 times per week	5	0.9%

Before closure: Driving with multiple people

Never	278	46.7%
Rarely	194	32.6%
Most days	123	20.7%
Total	595	

Before closure: Riding the bus

Never	508	92.7%
Rarely	20	3.6%
Most days	20	3.6%
Total	548	

Before closure: Riding MetroLink (light rail)

Never	480	86.5%
Rarely	43	7.7%
Most days	32	5.8%
Total	555	

Before closure: Biking

Never	515	94.5%
Rarely	18	3.3%
Most days	12	2.2%
Total	545	

Before closure: Walking

Never	464	79.7%
Rarely	69	11.9%
Most days	49	8.4%
Total	582	

Before closure: Telecommuting

Never	502	92.3%
Rarely	22	4.0%
Most days	20	3.7%

	most weekdays	4	.5	.7	98.0
	almost every day	11	1.4	2.0	100.0
	Total	544	70.1	100.0	
Missing	System	232	29.9		
Total		776	100.0		

After closure: Driving alone					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	108	13.9	15.4	15.4
	1 to 2 times per week	111	14.3	15.8	31.2
	3 to 4 times per week	66	8.5	9.4	40.6
	most weekdays	140	18.0	19.9	60.5
	almost every day	277	35.7	39.5	100.0
	Total	702	90.5	100.0	
Missing	System	74	9.5		
Total		776	100.0		

After closure: Driving with multiple people					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	294	37.9	49.0	49.0
	1 to 2 times per week	193	24.9	32.2	81.2
	3 to 4 times per week	56	7.2	9.3	90.5
	most weekdays	30	3.9	5.0	95.5
	almost every day	27	3.5	4.5	100.0
	Total	600	77.3	100.0	
Missing	System	176	22.7		
Total		776	100.0		

After closure: Riding the bus					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	510	65.7	92.6	92.6
	1 to 2 times per week	21	2.7	3.8	96.4
	3 to 4 times per week	5	.6	.9	97.3
	most weekdays	5	.6	.9	98.2
	almost every day	10	1.3	1.8	100.0
	Total	551	71.0	100.0	
Missing	System	225	29.0		
Total		776	100.0		

After closure: Riding MetroLink (light rail)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	481	62.0	87.0	87.0
	1 to 2 times per week	40	5.2	7.2	94.2
	3 to 4 times per week	9	1.2	1.6	95.8
	most weekdays	12	1.5	2.2	98.0
	almost every day	11	1.4	2.0	100.0
	Total	553	71.3	100.0	
Missing	System	223	28.7		
Total		776	100.0		

After closure: Biking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	516	66.5	94.5	94.5
	1 to 2 times per week	16	2.1	2.9	97.4
	3 to 4 times per week	9	1.2	1.6	99.1
	most weekdays	3	.4	.5	99.6
	almost every day	2	.3	.4	100.0
	Total	546	70.4	100.0	
Missing	System	230	29.6		
Total		776	100.0		

After closure: Walking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	450	58.0	80.1	80.1

most weekdays	4	0.7%
almost every day	11	2.0%
Total	544	

Total 544

After closure: Driving alone

	Frequency	Percent
Never	108	15.4%
1 to 2 times per week	111	15.8%
3 to 4 times per week	66	9.4%
most weekdays	140	19.9%
almost every day	277	39.5%
Total	702	

After closure: Driving alone

Never	108	15.4%
Rarely	111	15.8%
Most days	483	68.8%
Total	702	

After closure: Driving with multiple people

	Frequency	Percent
Never	294	49.0%
1 to 2 times per week	193	32.2%
3 to 4 times per week	56	9.3%
most weekdays	30	5.0%
almost every day	27	4.5%
Total	600	

After closure: Driving with multiple people

Never	294	49.0%
Rarely	193	32.2%
Most days	113	18.8%
Total	600	

After closure: Riding the bus

	Frequency	Percent
Never	510	92.6%
1 to 2 times per week	21	3.8%
3 to 4 times per week	5	0.9%
most weekdays	5	0.9%
almost every day	10	1.8%
Total	551	

After closure: Riding the bus

Never	510	92.6%
Rarely	21	3.8%
Most days	20	3.6%
Total	551	

After closure: Riding MetroLink (light rail)

	Frequency	Percent
Never	481	87.0%
1 to 2 times per week	40	7.2%
3 to 4 times per week	9	1.6%
most weekdays	12	2.2%
almost every day	11	2.0%
Total	553	

After closure: Riding MetroLink (light rail)

Never	481	87.0%
Rarely	40	7.2%
Most days	32	5.8%
Total	553	

After closure: Biking

	Frequency	Percent
Never	516	94.5%
1 to 2 times per week	16	2.9%
3 to 4 times per week	9	1.6%
most weekdays	3	0.5%
almost every day	2	0.4%
Total	546	

After closure: Biking

Never	516	94.5%
Rarely	16	2.9%
Most days	14	2.6%
Total	546	

After closure: Walking

	Frequency	Percent
Never	450	80.1%

After closure: Walking

Never	450	80.1%
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	1 to 2 times per week	57	7.3	10.1	90.2
	3 to 4 times per week	21	2.7	3.7	94.0
	most weekdays	7	.9	1.2	95.2
	almost every day	27	3.5	4.8	100.0
Missing	Total	562	72.4	100.0	
Total	System	214	27.6		
		776	100.0		

After closure: Telecommuting					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	493	63.5	91.3	91.3
	1 to 2 times per week	21	2.7	3.9	95.2
	3 to 4 times per week	8	1.0	1.5	96.7
	most weekdays	5	.6	.9	97.6
	almost every day	13	1.7	2.4	100.0
	Total	540	69.6	100.0	
Missing	System	236	30.4		
Total		776	100.0		

In a typical week before the closure, how often did you travel on that section?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	59	7.6	7.9	7.9
	Very Rarely	212	27.3	28.3	36.2
	Once a Week	124	16.0	16.6	52.8
	Two to Three Times a Week	182	23.5	24.3	77.1
	Most Weekdays	54	7.0	7.2	84.4
	Almost Every Day	117	15.1	15.6	100.0
	Total	748	96.4	100.0	
Missing	System	28	3.6		
Total		776	100.0		

Please indicate how long it takes you to make most trips now compared to before the closure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	At least 10 minutes	20	2.6	2.8	2.8
	5 to 10 minutes faster	21	2.7	2.9	5.7
	I have not noticed much difference	286	36.9	40.1	45.8
	5 to 10 minutes longer	148	19.1	20.7	66.5
	At least 10 minutes longer	239	30.8	33.5	100.0
	Total	714	92.0	100.0	
Missing	System	62	8.0		
Total		776	100.0		

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	314	40.5	41.6	41.6
	Female	441	56.8	58.4	100.0
	Total	755	97.3	100.0	
Missing	System	21	2.7		
Total		776	100.0		

American Indian					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	1.5	100.0	100.0
Missing	System	764	98.5		
Total		776	100.0		

Asian					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	.9	100.0	100.0
Missing	System	769	99.1		
Total		776	100.0		

1 to 2 times per week	57	10.1%	Rarely	57	10.1%
3 to 4 times per week	21	3.7%	Most days	55	9.8%
most weekdays	7	1.2%	Total	562	
almost every day	27	4.8%			
Total	562				

After closure: Telecommuting			After closure: Telecommuting		
	Frequency	Percent		Frequency	Percent
Never	493	91.3%	Never	493	91.3%
1 to 2 times per week	21	3.9%	Rarely	21	3.9%
3 to 4 times per week	8	1.5%	Most days	26	4.8%
most weekdays	5	0.9%	Total	540	
almost every day	13	2.4%			
Total	540				

In a typical week before the closure, how often did you travel on that section?			In a typical week before the closure, how often did you travel on that section?		
	Frequency	Percent		Frequency	Percent
Never	59	9.4%	Never	59	9.35%
Very Rarely	212	33.6%	Rarely	212	33.60%
Once a Week	124	19.7%	Most days	360	57.05%
Two to Three Times a Week	182	28.8%	Total	631	
Most Weekdays	54	8.6%			
Almost Every Day	631				

Please indicate how long it takes you to make most trips now compared to before the closure			Please indicate how long it takes you to make most trips now compared to before the closure		
	Frequency	Percent		Frequency	Percent
At least 10 minutes fast	20	2.8%	Faster	41	5.7%
5 to 10 minutes faster	21	2.9%	No Difference	286	40.1%
I have not noticed much difference	286	40.1%	Longer	387	54.2%
5 to 10 minutes longer	148	20.7%	Total	714	
At least 10 minutes longer	239	33.5%			
Total	714				

Gender					
Male	314	41.6%			
Female	441	58.4%			
	755				

To what ethnic groups do you belong?					
American Indian	12	1.6%			
Asian	7	0.9%			
Black or African-American	124	16.3%			
Hispanic or Latino	9	1.2%			
White or Caucasian	596	78.3%			
Other	13	1.7%			
	761				

Black or African American					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	124	16.0	100.0	100.0
Missing	System	652	84.0		
Total		776	100.0		

Hispanic or Latino					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	1.2	100.0	100.0
Missing	System	767	98.8		
Total		776	100.0		

White or Caucasian					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	596	76.8	100.0	100.0
Missing	System	180	23.2		
Total		776	100.0		

Other					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	1.7	100.0	100.0
Missing	System	763	98.3		
Total		776	100.0		

VisitZip					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	51110	1	.1	.2	.2
	53122	1	.1	.2	.3
	55555	1	.1	.2	.5
	62005	1	.1	.2	.6
	62010	1	.1	.2	.8
	62012	1	.1	.2	.9
	62017	1	.1	.2	1.1
	62021	1	.1	.2	1.2
	62029	1	.1	.2	1.4
	62060	1	.1	.2	1.5
	62101	1	.1	.2	1.7
	62106	1	.1	.2	1.8
	62112	1	.1	.2	2.0
	62116	1	.1	.2	2.2
	62117	1	.1	.2	2.3
	62125	1	.1	.2	2.5
	62129	2	.3	.3	2.8
	62131	1	.1	.2	2.9
	62132	1	.1	.2	3.1
	62138	1	.1	.2	3.2
	62139	1	.1	.2	3.4
	62141	1	.1	.2	3.5
	62234	1	.1	.2	3.7
	63001	1	.1	.2	3.8
	63005	4	.5	.6	4.5
	63006	1	.1	.2	4.6
	63010	2	.3	.3	4.9
	63011	5	.6	.8	5.7
	63017	22	2.8	3.4	9.1
	63019	1	.1	.2	9.2
	63021	5	.6	.8	10.0
	63026	4	.5	.6	10.6
	63031	1	.1	.2	10.8
	63033	2	.3	.3	11.1
	63042	3	.4	.5	11.5
	63043	7	.9	1.1	12.6
	63044	4	.5	.6	13.2
	63074	1	.1	.2	13.4
	63100	1	.1	.2	13.5

	63101	21	2.7	3.2	16.8
	63102	16	2.1	2.5	19.2
	63103	22	2.8	3.4	22.6
	63104	10	1.3	1.5	24.2
	63105	53	6.8	8.2	32.3
	63106	14	1.8	2.2	34.5
	63107	2	.3	.3	34.8
	63108	19	2.4	2.9	37.7
	63109	20	2.6	3.1	40.8
	63110	29	3.7	4.5	45.2
	63111	13	1.7	2.0	47.2
	63112	5	.6	.8	48.0
	63113	5	.6	.8	48.8
	63114	6	.8	.9	49.7
	63115	5	.6	.8	50.5
	63116	19	2.4	2.9	53.4
	63117	35	4.5	5.4	58.8
	63118	11	1.4	1.7	60.5
	63119	9	1.2	1.4	61.8
	63120	3	.4	.5	62.3
	63121	2	.3	.3	62.6
	63122	15	1.9	2.3	64.9
	63123	11	1.4	1.7	66.6
	63124	9	1.2	1.4	68.0
	63125	9	1.2	1.4	69.4
	63126	4	.5	.6	70.0
	63127	3	.4	.5	70.5
	63128	1	.1	.2	70.6
	63129	5	.6	.8	71.4
	63130	29	3.7	4.5	75.8
	63131	16	2.1	2.5	78.3
	63132	6	.8	.9	79.2
	63133	3	.4	.5	79.7
	63135	4	.5	.6	80.3
	63136	5	.6	.8	81.1
	63137	10	1.3	1.5	82.6
	63138	1	.1	.2	82.8
	63139	16	2.1	2.5	85.2
	63141	26	3.4	4.0	89.2
	63142	1	.1	.2	89.4
	63143	14	1.8	2.2	91.5
	63144	12	1.5	1.8	93.4
	63145	6	.8	.9	94.3
	63146	10	1.3	1.5	95.8
	63147	8	1.0	1.2	97.1
	63155	2	.3	.3	97.4
	63167	2	.3	.3	97.7
	63301	4	.5	.6	98.3
	63302	1	.1	.2	98.5
	63303	3	.4	.5	98.9
	63321	1	.1	.2	99.1
	63366	1	.1	.2	99.2
	63367	1	.1	.2	99.4
	63385	2	.3	.3	99.7
	63390	1	.1	.2	99.8
	64045	1	.1	.2	100.0
	Total	650	83.8	100.0	
Missing	System	126	16.2		
Total		776	100.0		

AgeGroup					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 25	33	4.3	4.4	4.4
	26 to 40	155	20.0	20.9	25.3
	41 to 65	413	53.2	55.6	80.9
	Over 65	142	18.3	19.1	100.0
	Total	743	95.7	100.0	
Missing	System	33	4.3		
Total		776	100.0		

AgeGroup			
18 to 25	33	4.4%	
26 to 40	155	20.9%	
41 to 65	413	55.6%	
Over 65	142	19.1%	
Total	743	100.0%	

HomeZip					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	63101	19	2.4	2.5	2.5
	63102	16	2.1	2.1	4.5
	63103	22	2.8	2.8	7.4
	63104	32	4.1	4.1	11.5
	63105	72	9.3	9.3	20.8
	63106	13	1.7	1.7	22.5
	63107	2	.3	.3	22.7
	63108	40	5.2	5.2	27.9
	63109	54	7.0	7.0	34.8
	63110	30	3.9	3.9	38.7
	63111	25	3.2	3.2	41.9
	63112	17	2.2	2.2	44.1
	63113	11	1.4	1.4	45.5
	63115	17	2.2	2.2	47.7
	63116	37	4.8	4.8	52.5
	63117	53	6.8	6.8	59.4
	63118	25	3.2	3.2	62.6
	63119	4	.5	.5	63.1
	63120	13	1.7	1.7	64.8
	63123	43	5.5	5.5	70.3
	63125	20	2.6	2.6	72.9
	63130	54	7.0	7.0	79.9
	63133	2	.3	.3	80.1
	63136	7	.9	.9	81.0
	63137	14	1.8	1.8	82.8
	63139	57	7.3	7.4	90.2
	63143	57	7.3	7.4	97.5
	63147	19	2.4	2.5	100.0
	Total	775	99.9	100.0	
Missing	System	1	.1		
Total		776	100.0		

APPENDIX A - ONLINE SURVEY RESULTS

Totals of Shared Questions for Both Online Surveys

Respondents	
Survey 1	1040
Survey 2	322
Total	1362

Have you taken this survey before?	
No	1257
Yes	54
I'm not sure	41
Total	1352

In a typical week before the closure (before January 2, 2008), how often did you travel on the closed section of I-64 (Highway 40)?		
Never	7	2.2%
Rarely	100	31.1%
Most days	215	66.8%
Total	322	

The closure has changed where I shop		
Strongly Agree	231	18.1%
Agree	297	23.3%
Disagree	393	30.9%
Strongly Disagree	352	27.7%
Total	1273	
Total Agreement	528	41.5%
Total Disagreement	745	58.5%

The closure has changed where I buy gas		
Strongly Agree	128	10.7%
Agree	118	9.8%
Disagree	423	35.3%
Strongly Disagree	529	44.2%
Total	1198	
Total Agreement	246	20.5%
Total Disagreement	952	79.5%

The closure has changed where I bank		
Strongly Agree	103	8.4%

First Online Survey

Frequency Table

QSurvey					
		Frequency	Percent	Percent	Percent
Valid	Brief	241	23.2	23.2	23.2
	Medium	165	15.9	15.9	39.0
	Detailed	634	61.0	61.0	100.0
	Total	1040	100.0	100.0	

QRepeat					
		Frequency	Percent	Percent	Percent
Valid	No	978	94.0	95.0	95.0
	Yes	31	3.0	3.0	98.0
	I'm not sure	21	2.0	2.0	100.0
	Total	1030	99.0	100.0	
Missing	System	10	1.0		
Total		1040	100.0		

The closure has changed where I shop					
		Frequency	Percent	Percent	Percent
Valid	Strongly Agree	165	15.9	16.0	16.0
	Agree	220	21.2	21.3	37.2
	No Opinion	52	5.0	5.0	42.3
	Disagree	313	30.1	30.3	72.5
	Strongly Disagree	284	27.3	27.5	100.0
	Total	1034	99.4	100.0	
Missing	System	6	.6		
Total		1040	100.0		

The closure has changed where I buy gas					
		Frequency	Percent	Percent	Percent
Valid	Strongly Agree	91	8.8	9.0	9.0
	Agree	85	8.2	8.4	17.5
	No Opinion	67	6.4	6.7	24.1
	Disagree	336	32.3	33.4	57.5
	Strongly Disagree	428	41.2	42.5	100.0
	Total	1007	96.8	100.0	
Missing	System	33	3.2		
Total		1040	100.0		

The closure has changed where I bank					
		Frequency	Percent	Percent	Percent
Valid	Strongly Agree	45	4.3	4.4	4.4

Second Online Survey

Frequency Table

Have you taken this survey before?					
		cy	Percent	Percent	Percent
Valid	No	279	86.6	86.6	86.6
	Yes	23	7.1	7.1	93.8
	I'm not sure	20	6.2	6.2	100.0
	Total	322	100.0	100.0	

In a typical week before the closure (before January 2, 2008), how					
		Frequen	Percent	Valid	Cumulative
Valid	Never	7	2.2	2.2	2.2
	Very rarely	45	14.0	14.0	16.1
	Once a week	55	17.1	17.1	33.2
	Two to three times	67	20.8	20.8	54.0
	Most weekdays	49	15.2	15.2	69.3
	Almost every day	99	30.7	30.7	100.0
	Total	322	100.0	100.0	

The closure has changed where I shop					
		cy	Percent	Percent	Percent
Valid	Strongly Agree	66	20.5	20.6	20.6
	Agree	77	23.9	24.0	44.5
	No Opinion	30	9.3	9.3	53.9
	Disagree	80	24.8	24.9	78.8
	Strongly Disagree	68	21.1	21.2	100.0
	Total	321	99.7	100.0	
Missing	System	1	.3		
Total		322	100.0		

The closure has changed where I buy gas					
		cy	Percent	Percent	Percent
Valid	Strongly Agree	37	11.5	12.7	12.7
	Agree	33	10.2	11.3	24.0
	No Opinion	34	10.6	11.6	35.6
	Disagree	87	27.0	29.8	65.4
	Strongly Disagree	101	31.4	34.6	100.0
	Total	292	90.7	100.0	
Missing	System	30	9.3		
Total		322	100.0		

The closure has changed my attendance to events like a baseball					
		cy	Percent	Percent	Percent
Valid	Strongly Agree	58	18.0	18.2	18.2

Agree	66	5.4%
Disagree	458	37.4%
Strongly Disagree	597	48.8%
Total	1224	
Total Agreement	169	13.8%
Total Disagreement	1055	86.2%

The closure has changed where I eat out

Strongly Agree	174	14.4%
Agree	302	25.1%
Disagree	347	28.8%
Strongly Disagree	382	31.7%
Total	1205	
Total Agreement	476	39.5%
Total Disagreement	729	60.5%

The closure has changed how often I travel to certain areas

Strongly Agree	475	36.7%
Agree	474	36.6%
Disagree	169	13.1%
Strongly Disagree	176	13.6%
Total	1294	
Total Agreement	949	73.3%
Total Disagreement	345	26.7%

The closure has changed where I work

Strongly Agree	58	4.8%
Agree	50	4.2%
Disagree	348	29.0%
Strongly Disagree	743	62.0%
Total	1199	
Total Agreement	108	9.0%
Total Disagreement	1091	91.0%

The closure has changed where I live

Strongly Agree	57	4.6%
Agree	48	3.8%
Disagree	320	25.6%
Strongly Disagree	824	66.0%
Total	1249	
Total Agreement	105	8.4%
Total Disagreement	1144	91.6%

Agree	20	1.9	2.0	6.4
No Opinion	84	8.1	8.3	14.7
Disagree	358	34.4	35.2	49.9
Strongly Disagree	510	49.0	50.1	100.0
Total	1017	97.8	100.0	
Missing System	23	2.2		
Total	1040	100.0		

The closure has changed where I eat out

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	124	11.9	12.4	12.4
	Agree	225	21.6	22.5	34.9
	No Opinion	73	7.0	7.3	42.2
	Disagree	267	25.7	26.7	69.0
	Strongly Disagree	310	29.8	31.0	100.0
	Total	999	96.1	100.0	
Missing	System	41	3.9		
Total		1040	100.0		

The closure has changed how often I travel to certain areas

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	357	34.3	34.8	34.8
	Agree	360	34.6	35.1	70.0
	No Opinion	36	3.5	3.5	73.5
	Disagree	129	12.4	12.6	86.0
	Strongly Disagree	143	13.8	14.0	100.0
	Total	1025	98.6	100.0	
Missing	System	15	1.4		
Total		1040	100.0		

The closure has changed where I work

		Frequency	Percent	Valid	Cumulative
Valid	Strongly Agree	43	4.1	4.3	4.3
	Agree	35	3.4	3.5	7.8
	No Opinion	70	6.7	7.0	14.8
	Disagree	273	26.3	27.4	42.2
	Strongly Disagree	576	55.4	57.8	100.0
	Total	997	95.9	100.0	
Missing	System	43	4.1		
Total		1040	100.0		

The closure has changed where I live

		Frequency	Percent	Valid	Cumulative
Valid	Strongly Agree	38	3.7	3.7	3.7
	Agree	35	3.4	3.4	7.1
	No Opinion	63	6.1	6.2	13.3
	Disagree	255	24.5	25.0	38.3
	Strongly Disagree	631	60.7	61.7	100.0
	Total	1022	98.3	100.0	
Missing	System	18	1.7		

Agree	46	14.3	14.4	32.6
No Opinion	28	8.7	8.8	41.4
Disagree	100	31.1	31.3	72.7
Strongly Disagree	87	27.0	27.3	100.0
Total	319	99.1	100.0	
Missing System	3	.9		
Total	322	100.0		

The closure has changed where I eat out

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	50	15.5	16.4	16.4
	Agree	77	23.9	25.3	41.8
	No Opinion	25	7.8	8.2	50.0
	Disagree	80	24.8	26.3	76.3
	Strongly Disagree	72	22.4	23.7	100.0
	Total	304	94.4	100.0	
Missing	System	18	5.6		
Total		322	100.0		

The closure has changed how often I travel to certain areas

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	118	36.6	37.2	37.2
	Agree	114	35.4	36.0	73.2
	No Opinion	12	3.7	3.8	77.0
	Disagree	40	12.4	12.6	89.6
	Strongly Disagree	33	10.2	10.4	100.0
	Total	317	98.4	100.0	
Missing	System	5	1.6		
Total		322	100.0		

The closure has changed where I work

		Frequency	Percent	Valid	Cumulative
Valid	Strongly Agree	15	4.7	4.9	4.9
	Agree	15	4.7	4.9	9.8
	No Opinion	33	10.2	10.8	20.7
	Disagree	75	23.3	24.6	45.2
	Strongly Disagree	167	51.9	54.8	100.0
	Total	305	94.7	100.0	
Missing	System	17	5.3		
Total		322	100.0		

The closure has changed where I live

		Frequency	Percent	Valid	Cumulative
Valid	Strongly Agree	19	5.9	6.0	6.0
	Agree	13	4.0	4.1	10.0
	No Opinion	29	9.0	9.1	19.1
	Disagree	65	20.2	20.4	39.5
	Strongly Disagree	193	59.9	60.5	100.0
	Total	319	99.1	100.0	
Missing	System	3	.9		

Has the closure of this section of I-64 changed your work habits?

No - I still work the same hours in the same location as I did before the closure	887	65.1%
Yes - My hours have shifted	297	21.8%
Yes - I now work from another location more often	84	6.2%
Yes - I quit my job and accepted one somewhere else	34	2.5%
Yes - other	123	9.0%
		104.6%

Total	1040	100.0		
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No - I still work the same hours in the same location as I did before the closure				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	681	65.5	100.0	100.0
Missing System	359	34.5		
Total	1040	100.0		

Yes - My hours have shifted				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	219	21.1	100.0	100.0
Missing System	821	78.9		
Total	1040	100.0		

Yes - I now work from another location (home, office, etc.) more often				
	Frequency	Percent	Valid	Cumulative
Valid 1	59	5.7	100.0	100.0
Missing System	981	94.3		
Total	1040	100.0		

Yes - I quit my job and accepted one somewhere else				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	27	2.6	100.0	100.0
Missing System	1013	97.4		
Total	1040	100.0		

Yes - other				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	88	8.5	100.0	100.0
Missing System	952	91.5		
Total	1040	100.0		

Never	29	2.8%
Rarely	363	34.9%
Most Days	648	62.3%
Total	1040	

In a typical week before the closure (before January 2, 2008), how often did				
	Frequency	Percent	Valid	Cumulative
Valid Never	29	2.8	2.8	2.8
Very rarely	205	19.7	19.7	22.5
Once a week	158	15.2	15.2	37.7
Two to three times a week	171	16.4	16.4	54.1
Most weekdays	142	13.7	13.7	67.8
Almost every day	335	32.2	32.2	100.0
Total	1040	100.0	100.0	

Now that I-64 construction is underway, have you shifted your commute time to work and/or school?

Total	322	100.0		
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No - I still work the same hours in the same location as I did before the closure				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	206	64.0	100.0	100.0
Missing System	116	36.0		
Total	322	100.0		

Yes - My hours have shifted				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	78	24.2	100.0	100.0
Missing System	244	75.8		
Total	322	100.0		

Yes - I now work from another location (home, another office,				
	Frequency	Percent	Valid	Cumulative
Valid 1	25	7.8	100.0	100.0
Missing System	297	92.2		
Total	322	100.0		

Yes - I quit my job and accepted one somewhere else				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	7	2.2	100.0	100.0
Missing System	315	97.8		
Total	322	100.0		

Yes - other				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	35	10.9	100.0	100.0
Missing System	287	89.1		
Total	322	100.0		

Now that I-64 construction is underway, have you shifted your

Yes - I now leave a little earlier (1 to 10 minutes earlier)	44	13.7%
Yes - I now leave earlier (more than 10 minutes earlier)	116	36.1%
Yes - I now leave a little later (1 to 10 minutes later)	8	2.5%
Yes - I now leave latter (more than 10 minutes later)	23	7.2%
No - I have not changed my commuting schedule to work	92	28.7%
No - This question is not applicable to me	38	11.8%
	321	

		Frequen cy	Percent	Valid Percent	Cumulative Percent
Valid	Yes - I now leave a	44	13.7	13.7	13.7
	Yes - I now leave	116	36.0	36.1	49.8
	earlier /more than				
	Yes - I now leave a	8	2.5	2.5	52.3
	little later (1 to 10				
	Yes - I now leave	23	7.1	7.2	59.5
	latter /more than 10				
	No - I have not	92	28.6	28.7	88.2
	changed my				
	No - This question	38	11.8	11.8	100.0
	Total	321	99.7	100.0	
Missing	System	1	.3		
Total		322	100.0		

Manchester Road

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I have not tried this	361	34.7	47.8	47.8
	alternative yet				
	I have tried this	209	20.1	27.7	75.5
	alternative and would				
	I have tried this	185	17.8	24.5	100.0
	Total	755	72.6	100.0	
Missing	System	285	27.4		
Total		1040	100.0		

Clayton Road

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I have not tried this	325	31.3	43.2	43.2
	alternative yet				
	I have tried this	196	18.8	26.0	69.2
	alternative and would				
	I have tried this	232	22.3	30.8	100.0
	Total	753	72.4	100.0	
Missing	System	287	27.6		
Total		1040	100.0		

Ladue Road

		Frequency	Percent	Valid	Cumulative
Valid	I have not tried this	361	34.7	47.8	47.8
	I have tried this	148	14.2	19.6	67.3
	I have tried this	247	23.8	32.7	100.0
	Total	756	72.7	100.0	
Missing	System	284	27.3		
Total		1040	100.0		

Olive Boulevard

		Frequency	Percent	Percent	Percent
Valid	I have not tried this	342	32.9	46.0	46.0
	alternative yet				
	I have tried this	226	21.7	30.4	76.3
	I have tried this	176	16.9	23.7	100.0
	Total	744	71.5	100.0	
Missing	System	296	28.5		
Total		1040	100.0		

Page Avenue					
		Frequency	Percent	Valid	Cumulative
Valid	I have not tried this alternative yet	437	42.0	59.1	59.1
	I have tried this	195	18.8	26.4	85.5
	I have tried this alternative and would	107	10.3	14.5	100.0
	Total	739	71.1	100.0	
Missing	System	301	28.9		
Total		1040	100.0		

I-44					
		Frequency	Percent	Valid	Cumulative
Valid	I have not tried this	324	31.2	42.5	42.5
	I have tried this	335	32.2	44.0	86.5
	I have tried this alternative and would	103	9.9	13.5	100.0
	NOT recommend it				
	Total	762	73.3	100.0	
Missing	System	278	26.7		
Total		1040	100.0		

I-55					
		Frequency	Percent	Valid	Cumulative
Valid	I have not tried this	619	59.5	83.9	83.9
	I have tried this	78	7.5	10.6	94.4
	I have tried this	41	3.9	5.6	100.0
	Total	738	71.0	100.0	
Missing	System	302	29.0		
Total		1040	100.0		

I-70					
		Frequency	Percent	Valid	Cumulative
Valid	I have not tried this	475	45.7	62.7	62.7
	I have tried this	191	18.4	25.2	87.9
	I have tried this	92	8.8	12.1	100.0
	Total	758	72.9	100.0	
Missing	System	282	27.1		
Total		1040	100.0		

How well the public has been kept informed about the New I-64 Project

Very Satisfied	587	46.3%
Satisfied	539	42.5%
Dissatisfied	99	7.8%
Very Dissatisfied	44	3.5%
Total	1269	
Total Satisfied	1126	88.7%
Total Dissatisfied	143	11.3%

How well the public has been kept informed about the New I-64 Project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	491	47.2	47.4	47.4
	Satisfied	401	38.6	38.7	86.2
	No Opinion	50	4.8	4.8	91.0
	Dissatisfied	65	6.3	6.3	97.3
	Very Dissatisfied	28	2.7	2.7	100.0
	Total	1035	99.5	100.0	
Missing	System	5	.5		
Total		1040	100.0		

How well the public has been kept informed about the New I-64

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	96	29.8	29.9	29.9
	Satisfied	138	42.9	43.0	72.9
	No Opinion	37	11.5	11.5	84.4
	Dissatisfied	34	10.6	10.6	95.0
	Very Dissatisfied	16	5.0	5.0	100.0
	Total	321	99.7	100.0	
Missing	System	1	.3		
Total		322	100.0		

The timeliness of the information being made available

Very Satisfied	515	41.4%
Satisfied	574	46.1%
Dissatisfied	111	8.9%
Very Dissatisfied	44	3.5%

The timeliness of the information being made available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	426	41.0	41.5	41.5
	Satisfied	433	41.6	42.2	83.7
	No Opinion	62	6.0	6.0	89.8
	Dissatisfied	79	7.6	7.7	97.5

The timeliness of the information being made available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	89	27.6	28.3	28.3
	Satisfied	141	43.8	44.8	73.0
	No Opinion	35	10.9	11.1	84.1
	Dissatisfied	32	9.9	10.2	94.3

Total	1244	
Total Satisfied	1089	87.5%
Total Dissatisfied	155	12.5%

How alternative travel options have been communicated

Very Satisfied	391	33.4%
Satisfied	535	45.7%
Dissatisfied	166	14.2%
Very Dissatisfied	78	6.7%
Total	1170	
Total Satisfied	926	79.1%
Total Dissatisfied	244	20.9%

Very Dissatisfied	26	2.5	2.5	100.0
Total	1026	98.7	100.0	
Missing System	14	1.3		
Total	1040	100.0		

How alternative travel options have been communicated

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	325	31.3	32.1	32.1
Satisfied	428	41.2	42.3	74.3
No Opinion	105	10.1	10.4	84.7
Dissatisfied	114	11.0	11.3	96.0
Very Dissatisfied	41	3.9	4.0	100.0
Total	1013	97.4	100.0	
Missing System	27	2.6		
Total	1040	100.0		

The traffic flow within construction work zones (other construction where you may travel)

Very Satisfied	216	19.8%
Satisfied	504	46.2%
Dissatisfied	243	22.3%
Very Dissatisfied	128	11.7%
Total	1091	
Total Satisfied	720	66.0%
Total Dissatisfied	371	34.0%

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	175	16.8	17.0	17.0
Satisfied	393	37.8	38.2	55.2
No Opinion	205	19.7	19.9	75.1
Dissatisfied	177	17.0	17.2	92.3
Very Dissatisfied	79	7.6	7.7	100.0
Total	1029	98.9	100.0	
Missing System	11	1.1		
Total	1040	100.0		

How understandable and accurate are the construction work zone signs

Very Satisfied	231	20.2%
Satisfied	630	55.1%
Dissatisfied	200	17.5%
Very Dissatisfied	82	7.2%
Total	1143	
Total Satisfied	861	75.3%
Total Dissatisfied	282	24.7%

How understandable and accurate are the construction work zone signs

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	171	16.4	16.7	16.7
Satisfied	481	46.3	46.9	63.6
No Opinion	163	15.7	15.9	79.5
Dissatisfied	163	15.7	15.9	95.4
Very Dissatisfied	47	4.5	4.6	100.0
Total	1025	98.6	100.0	
Missing System	15	1.4		
Total	1040	100.0		

How well are you managing to move around the St. Louis area with the closure of I-64

Very Satisfied	293	23.8%
Satisfied	564	45.9%
Dissatisfied	251	20.4%
Very Dissatisfied	122	9.9%
Total	1230	
Total Satisfied	857	69.7%
Total Dissatisfied	373	30.3%

How well are you managing to move around the St. Louis area with the

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	239	23.0	23.3	23.3
Satisfied	438	42.1	42.7	66.0
No Opinion	84	8.1	8.2	74.2
Dissatisfied	190	18.3	18.5	92.7
Very Dissatisfied	75	7.2	7.3	100.0
Total	1026	98.7	100.0	
Missing System	14	1.3		
Total	1040	100.0		

The decision to complete the work by closing I-64 for 2 years instead of taking 6-8 year

Very Satisfied	606	49.6%
Satisfied	329	26.9%
Dissatisfied	123	10.1%

The decision to complete the work by closing I-64 for 2 years instead of

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	451	43.4	43.7	43.7
Satisfied	262	25.2	25.4	69.0
No Opinion	101	9.7	9.8	78.8

Very Dissatisfied	18	5.6	5.7	100.0
Total	315	97.8	100.0	
Missing System	7	2.2		
Total	322	100.0		

How alternative travel options have been communicated

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	66	20.5	20.8	20.8
Satisfied	107	33.2	33.6	54.4
No Opinion	56	17.4	17.6	72.0
Dissatisfied	52	16.1	16.4	88.4
Very Dissatisfied	37	11.5	11.6	100.0
Total	318	98.8	100.0	
Missing System	4	1.2		
Total	322	100.0		

The traffic flow within construction work zones (other construction where you may travel)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	41	12.7	13.0	13.0
Satisfied	111	34.5	35.2	48.3
No Opinion	48	14.9	15.2	63.5
Dissatisfied	66	20.5	21.0	84.4
Very Dissatisfied	49	15.2	15.6	100.0
Total	315	97.8	100.0	
Missing System	7	2.2		
Total	322	100.0		

How understandable and accurate are the construction work zone

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	60	18.6	19.0	19.0
Satisfied	149	46.3	47.2	66.1
No Opinion	35	10.9	11.1	77.2
Dissatisfied	37	11.5	11.7	88.9
Very Dissatisfied	35	10.9	11.1	100.0
Total	316	98.1	100.0	
Missing System	6	1.9		
Total	322	100.0		

How well are you managing to move around the St. Louis area

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	54	16.8	17.1	17.1
Satisfied	126	39.1	40.0	57.1
No Opinion	27	8.4	8.6	65.7
Dissatisfied	61	18.9	19.4	85.1
Very Dissatisfied	47	14.6	14.9	100.0
Total	315	97.8	100.0	
Missing System	7	2.2		
Total	322	100.0		

The decision to complete the work by closing I-64 for 2 years

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Satisfied	155	48.1	48.7	48.7
Satisfied	67	20.8	21.1	69.8
No Opinion	28	8.7	8.8	78.6

Very Dissatisfied	164	13.4%
Total	1222	
Total Satisfied	935	76.5%
Total Dissatisfied	287	23.5%

Your overall level of satisfaction with how the I-64 closure has been handled

Very Satisfied	440	35.1%
Satisfied	522	41.6%
Dissatisfied	154	12.3%
Very Dissatisfied	139	11.1%
Total	1255	
Total Satisfied	962	76.7%
Total Dissatisfied	293	23.3%

Dissatisfied	98	9.4	9.5	88.3
Very Dissatisfied	121	11.6	11.7	100.0
Total	1033	99.3	100.0	
Missing System	7	.7		
Total	1040	100.0		

Your overall level of satisfaction with how the I-64 closure has been handled

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	338	32.5	32.7	32.7
Satisfied	406	39.0	39.3	72.0
No Opinion	75	7.2	7.3	79.3
Dissatisfied	116	11.2	11.2	90.5
Very Dissatisfied	98	9.4	9.5	100.0
Total	1033	99.3	100.0	
Missing System	7	.7		
Total	1040	100.0		

Dissatisfied	25	7.8	7.9	86.5
Very Dissatisfied	43	13.4	13.5	100.0
Total	318	98.8	100.0	
Missing System	4	1.2		
Total	322	100.0		

Your overall level of satisfaction with how the I-64 closure has

	Frequen	Percent	Valid	Cumulative
Valid Very Satisfied	102	31.7	31.8	31.8
Satisfied	116	36.0	36.1	67.9
No Opinion	24	7.5	7.5	75.4
Dissatisfied	38	11.8	11.8	87.2
Very Dissatisfied	41	12.7	12.8	100.0
Total	321	99.7	100.0	
Missing System	1	.3		
Total	322	100.0		

Before coming to this survey, did you know that the section of I-64

	Frequency	Percent	Valid	Cumulative
Valid Yes	784	75.4	98.4	98.4
No	13	1.3	1.6	100.0
Total	797	76.6	100.0	
Missing System	243	23.4		
Total	1040	100.0		

When did you learn that I-64 was going to be closed between Ballas Road

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid January 2008	14	1.3	1.8	1.8
December 2007	31	3.0	3.9	5.6
Before December	703	67.6	88.1	93.7
I'm not sure	50	4.8	6.3	100.0
Total	798	76.7	100.0	
Missing System	242	23.3		
Total	1040	100.0		

Detailed overall satisfaction question concerning closure vs. 6 to 8 years

Very Satisfied	560	54.5%
Satisfied	249	24.2%
Dissatisfied	112	10.9%
Very Dissatisfied	106	10.3%
Total	1027	
Total Satisfied	809	78.8%
Total Dissatisfied	218	21.2%

Detailed overall satisfaction question concerning closure vs. 6 to 8 years

	Frequency	Percent	Valid	Cumulative
Valid Very Satisfied	393	37.8	49.4	49.4
Satisfied	182	17.5	22.9	72.3
No Opinion	58	5.6	7.3	79.6
Dissatisfied	83	8.0	10.4	90.1
Very Dissatisfied	79	7.6	9.9	100.0
Total	795	76.4	100.0	
Missing System	245	23.6		
Total	1040	100.0		

The alternative to closing parts of I-64 (Highway 40) for two years

	Frequen	Percent	Valid	Cumulative
Valid Very Satisfied	167	51.9	52.8	52.8
Satisfied	67	20.8	21.2	74.1
No Opinion	26	8.1	8.2	82.3
Dissatisfied	29	9.0	9.2	91.5
Very Dissatisfied	27	8.4	8.5	100.0
Total	316	98.1	100.0	
Missing System	6	1.9		
Total	322	100.0		

How effective are the temporary lane additions in shoulder areas along I-44, I-70, I-270, and Page?

Total Effective	206	70.3%
Total Ineffective (Worse)	53	18.1%
Total No Difference	34	11.6%
Total	293	

How effective are the temporary lane additions in shoulder areas

	Frequen	Percent	Valid	Cumulative
Valid Very Effective	97	30.1	30.4	30.4
Slightly Effective	109	33.9	34.2	64.6
No difference	22	6.8	6.9	71.5

How effective are the permanent traffic signal timing and interconnection?

Total Effective	188	65.5%
Total Ineffective (Worse)	38	13.2%
Total No Difference	61	21.3%
Total	287	

How effective is the traveler's information displayed on interstates and available on 511?

Total Effective	178	62.7%
Total Ineffective (Worse)	32	11.3%
Total No Difference	74	26.1%
Total	284	

How effective is the I-64 Traffic Response services on non-interstate roads to assist motorists and emergency response staff in early clearance of incidents?

Total Effective	129	53.1%
Total Ineffective (Worse)	21	8.6%
Total No Difference	93	38.3%
Total	243	

TV News	850	62.4%
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TV News				
	Frequency	Percent	Valid	Cumulative
Valid 1	622	59.8	100.0	100.0

	Slightly Ineffective	27	8.4	8.5	79.9
	Very ineffective	26	8.1	8.2	88.1
	(Worse)				
	I Have Not Noticed	12	3.7	3.8	91.8
	No Idea	26	8.1	8.2	100.0
	Total	319	99.1	100.0	
Missing	System	3	.9		
Total		322	100.0		

How effective are the permanent traffic signal timing and					
		Frequen	Percent	Valid	Cumulative
Valid	Very Effective	108	33.5	34.0	34.0
	Slightly Effective	80	24.8	25.2	59.1
	No difference	31	9.6	9.7	68.9
	Slightly Ineffective	18	5.6	5.7	74.5
	(Worse)				
	Very ineffective	20	6.2	6.3	80.8
	I Have Not Noticed	30	9.3	9.4	90.3
	No Idea	31	9.6	9.7	100.0
	Total	318	98.8	100.0	
Missing	System	4	1.2		
Total		322	100.0		

How effective is the traveler's information displayed on interstates					
		Frequen	Percent	Valid	Cumulative
Valid	Very Effective	72	22.4	22.6	22.6
	Slightly Effective	106	32.9	33.2	55.8
	No difference	56	17.4	17.6	73.4
	Slightly Ineffective	12	3.7	3.8	77.1
	Very ineffective	20	6.2	6.3	83.4
	I Have Not Noticed	18	5.6	5.6	89.0
	No Idea	35	10.9	11.0	100.0
	Total	319	99.1	100.0	
Missing	System	3	.9		
Total		322	100.0		

How effective is the I-64 Traffic Response services on non-					
		Frequen	Percent	Valid	Cumulative
		cy	Percent	Percent	Percent
Valid	Very Effective	62	19.3	19.6	19.6
	Slightly Effective	67	20.8	21.1	40.7
	No difference	47	14.6	14.8	55.5
	Slightly Ineffective	13	4.0	4.1	59.6
	(Worse)				
	Very ineffective	8	2.5	2.5	62.1
	I Have Not Noticed	46	14.3	14.5	76.7
	No Idea	74	23.0	23.3	100.0
	Total	317	98.4	100.0	
Missing	System	5	1.6		
Total		322	100.0		

TV News				
	Frequen	Percent	Valid	Cumulative
Valid 1	228	70.8	100.0	100.0

Missing System	418	40.2		
Total	1040	100.0		

Missing System	94	29.2		
Total	322	100.0		

Radio News69851.2%

Radio News				
	Frequency	Percent	Valid	Cumulative
Valid 1	506	48.7	100.0	100.0
Missing System	534	51.3		
Total	1040	100.0		

Radio News				
	Frequen	Percent	Valid	Cumulative
Valid 1	192	59.6	100.0	100.0
Missing System	130	40.4		
Total	322	100.0		

Radio Talk Shows26919.8%

Radio Talk Shows				
	Frequency	Percent	Valid	Cumulative
Valid 1	202	19.4	100.0	100.0
Missing System	838	80.6		
Total	1040	100.0		

Radio Talk Shows				
	Frequen	Percent	Valid	Cumulative
Valid 1	67	20.8	100.0	100.0
Missing System	255	79.2		
Total	322	100.0		

Newspapers58543.0%

Newspapers				
	Frequency	Percent	Valid	Cumulative
Valid 1	449	43.2	100.0	100.0
Missing System	591	56.8		
Total	1040	100.0		

Newspapers				
	Frequen	Percent	Valid	Cumulative
Valid 1	136	42.2	100.0	100.0
Missing System	186	57.8		
Total	322	100.0		

Internet Sites82060.2%

Internet Sites				
	Frequency	Percent	Valid	Cumulative
Valid 1	605	58.2	100.0	100.0
Missing System	435	41.8		
Total	1040	100.0		

Internet Sites				
	Frequen	Percent	Valid	Cumulative
Valid 1	215	66.8	100.0	100.0
Missing System	107	33.2		
Total	322	100.0		

Receive information in mail (newsletter, etc.)17913.1%

Receive information in mail (newsletter, etc.)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	117	11.3	100.0	100.0
Missing System	923	88.8		
Total	1040	100.0		

Mail				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	62	19.3	100.0	100.0
Missing System	260	80.7		
Total	322	100.0		

Project email from MoDOT or I-64 Team33024.2%

Project email from MoDOT or I-64 Team				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	225	21.6	100.0	100.0
Missing System	815	78.4		
Total	1040	100.0		

Email from MoDOT or I-64 Team				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	105	32.6	100.0	100.0
Missing System	217	67.4		
Total	322	100.0		

Project display boards at public gatherings14710.8%

Project display boards at public gatherings				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	97	9.3	100.0	100.0
Missing System	943	90.7		
Total	1040	100.0		

Project display boards at public gatherings				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	50	15.5	100.0	100.0
Missing System	272	84.5		
Total	322	100.0		

Road signs19560.6%

Road signs when I was headed toward the closed highway				
--	--	--	--	--

Road signs				
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	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	394	37.9	100.0	100.0
Missing System	646	62.1		
Total	1040	100.0		

Road signs on other roads

	Frequency	Percent	Percent	Percent
Valid 1	289	27.8	100.0	100.0
Missing System	751	72.2		
Total	1040	100.0		

Word of Mouth (a friend tells me)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	108	10.4	100.0	100.0
Missing System	932	89.6		
Total	1040	100.0		

Work

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	104	10.0	100.0	100.0
Missing System	936	90.0		
Total	1040	100.0		

Call 1-888-ASK-MODOT

	Frequency	Percent	Valid	Cumulative
Valid 1	44	4.2	100.0	100.0
Missing System	996	95.8		
Total	1040	100.0		

Call 511

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	53	5.1	100.0	100.0
Missing System	987	94.9		
Total	1040	100.0		

Other

	Frequency	Percent	Valid	Cumulative
Valid 1	18	1.7	100.0	100.0
Missing System	1022	98.3		
Total	1040	100.0		

GatewayGuide.com

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	187	18.0	100.0	100.0
Missing System	853	82.0		
Total	1040	100.0		

MoDOT's website (MoDOT.org and/or MoDOT.gov)

	Frequency	Percent	Valid	Cumulative
Valid 1	304	29.2	100.0	100.0

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	195	60.6	100.0	100.0
Missing System	127	39.4		
Total	322	100.0		

Other

	Frequency	Percent	Valid	Cumulative
Valid 1	17	5.3	100.0	100.0
Missing System	305	94.7		
Total	322	100.0		

GatewayGuide.com

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	46	14.3	100.0	100.0
Missing System	276	85.7		
Total	322	100.0		

MoDOT's website

	Frequency	Percent	Valid	Cumulative
Valid 1	133	41.3	100.0	100.0

Word of Mouth (a friend tells me)10810.4%

Work10410.0%

Call 1-888-ASK-MODOT444.2%

Call 511535.1%

Other352.6%

GatewayGuide.com23328.4%

MoDOT's website (MoDOT.org and/43753.3%

			Missing System Total	736 1040	70.8 100.0		
The New I-64 site (TheNewI64.org)	584	71.2%	The New I-64 site (TheNewI64.org)				
				Frequency	Percent	Valid Percent	Cumulative Percent
			Valid 1	414	39.8	100.0	100.0
			Missing System	626	60.2		
			Total	1040	100.0		
Metro (MetroStLouis.org)	115	14.0%	Metro (MetroStLouis.org)				
				Frequency	Percent	Valid	Cumulative
			Valid 1	84	8.1	100.0	100.0
			Missing System	956	91.9		
			Total	1040	100.0		
DontGetStuck.org	28	3.4%	DontGetStuck.org				
				Frequency	Percent	Valid Percent	Cumulative Percent
			Valid 1	20	1.9	100.0	100.0
			Missing System	1020	98.1		
			Total	1040	100.0		
GetAroundSTL.com	38	4.6%	GetAroundSTL.com				
				Frequency	Percent	Valid	Cumulative
			Valid 1	27	2.6	100.0	100.0
			Missing System	1013	97.4		
			Total	1040	100.0		
MidMetro4.com	20	2.4%	MidMetro4.com				
				Frequency	Percent	Valid Percent	Cumulative Percent
			Valid 1	14	1.3	100.0	100.0
			Missing System	1026	98.7		
			Total	1040	100.0		
Post-Dispatch website (STLToday.c	437	53.3%	Post-Dispatch website (STLToday.com)				
				Frequency	Percent	Valid	Cumulative
			Valid 1	327	31.4	100.0	100.0
			Missing System	713	68.6		
			Total	1040	100.0		
Post 4 Traffic Online (post4trafficonl	145	17.7%	Post 4 Traffic Online (post4trafficonline.com)				
				Frequency	Percent	Valid Percent	Cumulative Percent
			Valid 1	119	11.4	100.0	100.0
			Missing System	921	88.6		
			Total	1040	100.0		
Radio AM 550 website (KTRS.com)	36	4.4%	Radio AM 550 website (KTRS.com)				
				Frequency	Percent	Valid	Cumulative
			Valid 1	18	1.7	100.0	100.0
			Missing System	1022	98.3		
			Total	1040	100.0		

			Missing System Total	189 322	58.7 100.0		
			The New I-64 site				
				Frequen cy	Percent	Valid Percent	Cumulative Percent
			Valid 1	170	52.8	100.0	100.0
			Missing System	152	47.2		
			Total	322	100.0		
			Metro (MetroStLouis.org)				
				Frequen	Percent	Valid	Cumulative
			Valid 1	31	9.6	100.0	100.0
			Missing System	291	90.4		
			Total	322	100.0		
			DontGetStuck.org				
				Frequen cy	Percent	Valid Percent	Cumulative Percent
			Valid 1	8	2.5	100.0	100.0
			Missing System	314	97.5		
			Total	322	100.0		
			GetAroundSTL.com				
				Frequen	Percent	Valid	Cumulative
			Valid 1	11	3.4	100.0	100.0
			Missing System	311	96.6		
			Total	322	100.0		
			MidMetro4.com				
				Frequen cy	Percent	Valid Percent	Cumulative Percent
			Valid 1	6	1.9	100.0	100.0
			Missing System	316	98.1		
			Total	322	100.0		
			Post-Dispatch website				
				Frequen	Percent	Valid	Cumulative
			Valid 1	110	34.2	100.0	100.0
			Missing System	212	65.8		
			Total	322	100.0		
			Post 4 Traffic Online				
				Frequen cy	Percent	Valid Percent	Cumulative Percent
			Valid 1	26	8.1	100.0	100.0
			Missing System	296	91.9		
			Total	322	100.0		
			Radio AM 550 site				
				Frequen	Percent	Valid	Cumulative
			Valid 1	18	5.6	100.0	100.0
			Missing System	304	94.4		
			Total	322	100.0		

Radio AM 1120 website (KMOX.cor10112.3%

Radio AM 1120 website (KMOX.com)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	70	6.7	100.0	100.0
Missing System	970	93.3		
Total	1040	100.0		

Radio AM 1120 site				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	31	9.6	100.0	100.0
Missing System	291	90.4		
Total	322	100.0		

TV Channel 2 website (MyFOXSTL.19824.1%

TV Channel 2 website (MyFOXSTL.com)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	137	13.2	100.0	100.0
Missing System	903	86.8		
Total	1040	100.0		

TV 2 site				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	61	18.9	100.0	100.0
Missing System	261	81.1		
Total	322	100.0		

TV Channel 4 website (KMOV.com)19924.3%

TV Channel 4 website (KMOV.com)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	145	13.9	100.0	100.0
Missing System	895	86.1		
Total	1040	100.0		

TV 4 site				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	54	16.8	100.0	100.0
Missing System	268	83.2		
Total	322	100.0		

TV Channel 5 website (KSDK.com)35543.3%

TV Channel 5 website (KSDK.com)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	261	25.1	100.0	100.0
Missing System	779	74.9		
Total	1040	100.0		

TV 5 site				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	94	29.2	100.0	100.0
Missing System	228	70.8		
Total	322	100.0		

Other546.6%

Other				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	40	3.8	100.0	100.0
Missing System	1000	96.2		
Total	1040	100.0		

Other				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	14	4.3	100.0	100.0
Missing System	308	95.7		
Total	322	100.0		

What information on the I-64 Project website do you find most useful?

Commuter Alternatives (Transit/Carpooling Options)152.6%
Construction Zone (Ongoing Closures)14324.6%
Map My Trip325.5%
Newsroom172.9%
Project Overview9015.5%
Traffic Impacts (Today's Closures)15927.4%
Web cams and/or Photo Gallery9115.7%
None of the Above345.9%
Total581100.0%

What information on the I-64 Project website do you find most useful?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commuter	14	1.3	3.4	3.4
	Construction Zone (Ongoing Closures)	84	8.1	20.4	23.8
	Map My Trip	22	2.1	5.3	29.1
	Newsroom	17	1.6	4.1	33.3
	Project Overview	64	6.2	15.5	48.8
	Traffic Impacts	120	11.5	29.1	77.9
	Web cams and/or	68	6.5	16.5	94.4
	None of the Above	23	2.2	5.6	100.0
Missing	Total	412	39.6	100.0	
	System	628	60.4		
Total		1040	100.0		

What information on the I-64 Project website do you find most					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commuter	1	.3	.6	.6
	Construction Zone (Ongoing Closures)	59	18.3	34.9	35.5
	Map My Trip	10	3.1	5.9	41.4
	Project Overview	26	8.1	15.4	56.8
	Traffic Impacts	39	12.1	23.1	79.9
	Web cams and/or	23	7.1	13.6	93.5
	None of the Above	11	3.4	6.5	100.0
	Total	169	52.5	100.0	
Missing	System	153	47.5		
	Total	322	100.0		

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not applicable or I	463	44.5	75.7	75.7
	Faster than before	6	.6	1.0	76.6
	Same time as before	58	5.6	9.5	86.1
	0 to 5 minutes longer	25	2.4	4.1	90.2
	5 to 15 minutes longer	26	2.5	4.2	94.4
	15 to 30 minutes	20	1.9	3.3	97.7
	More than 30 minutes	14	1.3	2.3	100.0
	Total	612	58.8	100.0	
	Missing System	428	41.2		
Total		1040	100.0		

Employment or Work Related					
		Frequency	Percent	Valid	Cumulative
Valid	Not applicable or I	44	4.2	7.1	7.1
	Faster than before	77	7.4	12.4	19.4
	Same time as before	107	10.3	17.2	36.6
	0 to 5 minutes longer	67	6.4	10.8	47.4
	5 to 15 minutes longer	142	13.7	22.8	70.1
	15 to 30 minutes	116	11.2	18.6	88.8
	More than 30 minutes	70	6.7	11.2	100.0
	Total	623	59.9	100.0	
	Missing System	417	40.1		
Total		1040	100.0		

Medical Reasons					
		Frequency	Percent	Valid	Cumulative
Valid	Not applicable or I	289	27.8	47.7	47.7
	Faster than before	6	.6	1.0	48.7
	Same time as before	107	10.3	17.7	66.3
	0 to 5 minutes longer	38	3.7	6.3	72.6
	5 to 15 minutes longer	69	6.6	11.4	84.0
	15 to 30 minutes	69	6.6	11.4	95.4
	More than 30 minutes	28	2.7	4.6	100.0
	Total	606	58.3	100.0	
	Missing System	434	41.7		
Total		1040	100.0		

Shopping, Recreation, and/or Entertainment					
		Frequency	Percent	Valid	Cumulative
Valid	Not applicable or I	88	8.5	14.3	14.3
	Faster than before	13	1.3	2.1	16.4
	Same time as before	167	16.1	27.2	43.6
	0 to 5 minutes longer	84	8.1	13.7	57.3
	5 to 15 minutes longer	138	13.3	22.5	79.8
	15 to 30 minutes	91	8.8	14.8	94.6
	More than 30 minutes longer than before	33	3.2	5.4	100.0
	Total	614	59.0	100.0	
	Missing System	426	41.0		
Total		1040	100.0		

Traveling Through the St. Louis Region					
		Frequency	Percent	Valid	Cumulative
Valid	Not applicable or I	103	9.9	16.5	16.5

Faster than before	15	1.4	2.4	18.8
Same time as before	106	10.2	16.9	35.8
0 to 5 minutes longer	59	5.7	9.4	45.2
5 to 15 minutes longer	151	14.5	24.1	69.3
15 to 30 minutes	127	12.2	20.3	89.6
More than 30 minutes longer than before	65	6.3	10.4	100.0
Total	626	60.2	100.0	
Missing System	414	39.8		
Total	1040	100.0		

Before the closure

		Driving alone			
		Frequency	Percent	Valid	Cumulative
Valid	Never	23	2.2	3.7	3.7
	A few times	29	2.8	4.6	8.3
	Once a week	20	1.9	3.2	11.4
	Twice a week	9	.9	1.4	12.9
	Most weekdays	161	15.5	25.6	38.5
	Almost every day	387	37.2	61.5	100.0
	Total	629	60.5	100.0	
Missing	System	411	39.5		
Total		1040	100.0		

		Driving with multiple people			
		Frequency	Percent	Percent	Percent
Valid	Never	274	26.3	44.4	44.4
	A few times	142	13.7	23.0	67.4
	Once a week	35	3.4	5.7	73.1
	Twice a week	79	7.6	12.8	85.9
	Most weekdays	40	3.8	6.5	92.4
	Almost every day	47	4.5	7.6	100.0
	Total	617	59.3	100.0	
Missing	System	423	40.7		
Total		1040	100.0		

		Riding the bus			
		Frequency	Percent	Percent	Percent
Valid	Never	579	55.7	94.3	94.3
	A few times	21	2.0	3.4	97.7
	Once a week	2	.2	.3	98.0
	Twice a week	4	.4	.7	98.7
	Most weekdays	3	.3	.5	99.2
	Almost every day	5	.5	.8	100.0
	Total	614	59.0	100.0	
Missing	System	426	41.0		
Total		1040	100.0		

		Riding MetroLink (light rail)			
		Frequency	Percent	Percent	Percent
Valid	Never	488	46.9	79.0	79.0
	A few times	104	10.0	16.8	95.8
	Once a week	6	.6	1.0	96.8
	Twice a week	6	.6	1.0	97.7
	Most weekdays	5	.5	.8	98.5

Almost every day	9	.9	1.5	100.0
Total	618	59.4	100.0	
Missing System	422	40.6		
Total	1040	100.0		

Biking					
		Frequency	Percent	Valid	Cumulative
Valid	Never	567	54.5	92.2	92.2
	A few times	31	3.0	5.0	97.2
	Once a week	7	.7	1.1	98.4
	Twice a week	3	.3	.5	98.9
	Most weekdays	4	.4	.7	99.5
	Almost every day	3	.3	.5	100.0
	Total	615	59.1	100.0	
Missing	System	425	40.9		
Total		1040	100.0		

Walking					
		Frequency	Percent	Valid	Cumulative
Valid	Never	518	49.8	84.9	84.9
	A few times	51	4.9	8.4	93.3
	Once a week	8	.8	1.3	94.6
	Twice a week	13	1.3	2.1	96.7
	Most weekdays	14	1.3	2.3	99.0
	Almost every day	6	.6	1.0	100.0
	Total	610	58.7	100.0	
Missing	System	430	41.3		
Total		1040	100.0		

Telecommuting					
		Frequency	Percent	Valid	Cumulative
Valid	Never	499	48.0	81.0	81.0
	A few times	74	7.1	12.0	93.0
	Once a week	21	2.0	3.4	96.4
	Twice a week	9	.9	1.5	97.9
	Most weekdays	9	.9	1.5	99.4
	Almost every day	4	.4	.6	100.0
	Total	616	59.2	100.0	
Missing	System	424	40.8		
Total		1040	100.0		

Before 7:00 AM					
		Frequency	Percent	Valid	Cumulative
Valid	1	192	18.5	100.0	100.0
Missing	System	848	81.5		
Total		1040	100.0		

Between 7:00 AM and 9:00 AM					
		Frequency	Percent	Valid	Cumulative
Valid	1	419	40.3	100.0	100.0
Missing	System	621	59.7		
Total		1040	100.0		

Between 9:00 AM and 3:00 PM					
		Frequency	Percent	Valid	Cumulative
Valid	1	93	8.9	100.0	100.0
Missing	System	947	91.1		
Total		1040	100.0		

Between 3:00 PM and 6:00 PM					
		Frequency	Percent	Valid	Cumulative

Valid	1	370	35.6	100.0	100.0
Missing	System	670	64.4		
Total		1040	100.0		

After 6:00 PM

		Frequency	Percent	Valid	Cumulative
Valid	1	125	12.0	100.0	100.0
Missing	System	915	88.0		
Total		1040	100.0		

After closure

Driving alone

		Frequency	Percent	Valid	Cumulative
Valid	Never	37	3.6	5.9	5.9
	A few times	36	3.5	5.8	11.7
	Once a week	9	.9	1.4	13.1
	Twice a week	14	1.3	2.2	15.4
	Most weekdays	155	14.9	24.8	40.2
	Almost every day	374	36.0	59.8	100.0
	Total	625	60.1	100.0	
Missing	System	415	39.9		
Total		1040	100.0		

Driving with multiple people

		Frequency	Percent	Valid	Cumulative
Valid	Never	314	30.2	51.0	51.0
	A few times	125	12.0	20.3	71.3
	Once a week	25	2.4	4.1	75.3
	Twice a week	71	6.8	11.5	86.9
	Most weekdays	34	3.3	5.5	92.4
	Almost every day	47	4.5	7.6	100.0
	Total	616	59.2	100.0	
Missing	System	424	40.8		
Total		1040	100.0		

Riding the bus

		Frequency	Percent	Valid	Cumulative
Valid	Never	579	55.7	94.6	94.6
	A few times	15	1.4	2.5	97.1
	Once a week	2	.2	.3	97.4
	Twice a week	5	.5	.8	98.2
	Most weekdays	5	.5	.8	99.0
	Almost every day	6	.6	1.0	100.0
	Total	612	58.8	100.0	
Missing	System	428	41.2		
Total		1040	100.0		

Riding MetroLink (light rail)

		Frequency	Percent	Valid	Cumulative
Valid	Never	506	48.7	82.4	82.4
	A few times	78	7.5	12.7	95.1
	Once a week	5	.5	.8	95.9
	Twice a week	7	.7	1.1	97.1
	Most weekdays	10	1.0	1.6	98.7
	Almost every day	8	.8	1.3	100.0
	Total	614	59.0	100.0	
Missing	System	426	41.0		
Total		1040	100.0		

Biking

		Frequency	Percent	Valid	Cumulative
Valid	Never	567	54.5	93.7	93.7
	A few times	23	2.2	3.8	97.5
	Once a week	3	.3	.5	98.0

In a typical week, how often do you commute by driving alone?

		Frequency	Percent	Valid	Cumulative
Valid	Never	11	3.4	3.5	3.5
	A few times	27	8.4	8.6	12.1
	Once a week	8	2.5	2.5	14.6
	Twice a week	11	3.4	3.5	18.2
	Most weekdays	87	27.0	27.7	45.9
	Almost every day	170	52.8	54.1	100.0
	Total	314	97.5	100.0	
Missing	System	8	2.5		
Total		322	100.0		

In a typical week, how often do you commute by driving with

		Frequency	Percent	Valid	Cumulative
Valid	Never	130	40.4	42.5	42.5
	A few times	80	24.8	26.1	68.6
	Once a week	15	4.7	4.9	73.5
	Twice a week	35	10.9	11.4	85.0
	Most weekdays	14	4.3	4.6	89.5
	Almost every day	32	9.9	10.5	100.0
	Total	306	95.0	100.0	
Missing	System	16	5.0		
Total		322	100.0		

In a typical week, how often do you commute by riding the bus?

		Frequency	Percent	Valid	Cumulative
Valid	Never	288	89.4	93.2	93.2
	A few times	14	4.3	4.5	97.7
	Once a week	1	.3	.3	98.1
	Twice a week	2	.6	.6	98.7
	Most weekdays	2	.6	.6	99.4
	Almost every day	2	.6	.6	100.0
	Total	309	96.0	100.0	
Missing	System	13	4.0		
Total		322	100.0		

In a typical week, how often do you commute by riding MetroLink

		Frequency	Percent	Valid	Cumulative
Valid	Never	250	77.6	81.2	81.2
	A few times	42	13.0	13.6	94.8
	Once a week	2	.6	.6	95.5
	Twice a week	4	1.2	1.3	96.8
	Most weekdays	3	.9	1.0	97.7
	Almost every day	7	2.2	2.3	100.0
	Total	308	95.7	100.0	
Missing	System	14	4.3		
Total		322	100.0		

In a typical week, how often do you commute by biking?

		Frequency	Percent	Valid	Cumulative
Valid	Never	281	87.3	90.4	90.4
	A few times	19	5.9	6.1	96.5
	Once a week	4	1.2	1.3	97.7

In a typical week, how often do you commute by driving alone?

Never	48	5.1%
Rarely	105	11.2%
Most Days	786	83.7%
Total	939	

In a typical week, how often do you commute by driving with multiple people?

Never	444	48.2%
Rarely	351	38.1%
Most Days	127	13.8%
Total	922	

In a typical week, how often do you commute by riding the bus?

Never	867	94.1%
Rarely	39	4.2%
Most Days	15	1.6%
Total	921	

In a typical week, how often do you commute by riding MetroLink (light rail)?

Never	756	82.0%
Rarely	138	15.0%
Most Days	28	3.0%
Total	922	

In a typical week, how often do you commute by biking?

Never	848	92.6%
Rarely	58	6.3%
Most Days	10	1.1%
Total	916	

In a typical week, how often do you commute by walking?

Never	788	85.9%
Rarely	103	11.2%
Most Days	26	2.8%
Total	917	

In a typical week, how often do you commute by telecommuting?

Never	721	79.1%
Rarely	161	17.7%
Most Days	29	3.2%
Total	911	

Routinely commute in the St. Louis area before 7:00 AM
Routinely commute in the St. Louis area between 7:00 AM and 9:00 AM
Routinely commute in the St. Louis area between 9:00 AM and noon
Routinely commute in the St. Louis area between noon and 3:00 PM
Routinely commute in the St. Louis area between 3:00 PM and 6:00 PM
Routinely commute in the St. Louis area after 6:00 PM

361 ###
529 ###
45 ###
55 ###
593 ###
236 ###

Twice a week	7	.7	1.2	99.2
Most weekdays	3	.3	.5	99.7
Almost every day	2	.2	.3	100.0
Total	605	58.2	100.0	
Missing System	435	41.8		
Total	1040	100.0		

Walking		Frequency	Percent	Valid	Cumulative
Valid	Never	534	51.3	87.8	87.8
	A few times	45	4.3	7.4	95.2
	Once a week	6	.6	1.0	96.2
	Twice a week	8	.8	1.3	97.5
	Most weekdays	9	.9	1.5	99.0
	Almost every day	6	.6	1.0	100.0
	Total	608	58.5	100.0	
Missing	System	432	41.5		
Total		1040	100.0		

Telecommuting		Frequency	Percent	Valid	Cumulative
Valid	Never	489	47.0	81.1	81.1
	A few times	60	5.8	10.0	91.0
	Once a week	22	2.1	3.6	94.7
	Twice a week	15	1.4	2.5	97.2
	Most weekdays	11	1.1	1.8	99.0
	Almost every day	6	.6	1.0	100.0
	Total	603	58.0	100.0	
Missing	System	437	42.0		
Total		1040	100.0		

Before 7:00 AM		Frequency	Percent	Valid	Cumulative
Valid	1	277	26.6	100.0	100.0
Missing	System	763	73.4		
Total		1040	100.0		

Between 7:00 AM and 9:00 AM		Frequency	Percent	Valid	Cumulative
Valid	1	334	32.1	100.0	100.0
Missing	System	706	67.9		
Total		1040	100.0		

Between 9:00 AM and 3:00 PM		Frequency	Percent	Valid	Cumulative
Valid	1	103	9.9	100.0	100.0
Missing	System	937	90.1		
Total		1040	100.0		

Between 3:00 PM and 6:00 PM		Frequency	Percent	Valid	Cumulative
Valid	1	376	36.2	100.0	100.0
Missing	System	664	63.8		
Total		1040	100.0		

After 6:00 PM

Twice a week	2	.6	.6	98.4
Most weekdays	3	.9	1.0	99.4
Almost every day	2	.6	.6	100.0
Total	311	96.6	100.0	
Missing System	11	3.4		
Total	322	100.0		

In a typical week, how often do you commute by walking?		Frequen	Percent	Valid	Cumulative
Valid	Never	254	78.9	82.2	82.2
	A few times	40	12.4	12.9	95.1
	Once a week	3	.9	1.0	96.1
	Twice a week	1	.3	.3	96.4
	Most weekdays	4	1.2	1.3	97.7
	Almost every day	7	2.2	2.3	100.0
	Total	309	96.0	100.0	
Missing	System	13	4.0		
Total		322	100.0		

In a typical week, how often do you commute by telecommuting?		Frequen	Percent	Valid	Cumulative
Valid	Never	232	72.0	75.3	75.3
	A few times	41	12.7	13.3	88.6
	Once a week	17	5.3	5.5	94.2
	Twice a week	6	1.9	1.9	96.1
	Most weekdays	1	.3	.3	96.4
	Almost every day	11	3.4	3.6	100.0
	Total	308	95.7	100.0	
Missing	System	14	4.3		
Total		322	100.0		

Routinely commute in the St. Louis area before 7:00 AM		Frequen	Percent	Valid	Cumulative
Valid	1	84	26.1	100.0	100.0
Missing	System	238	73.9		
Total		322	100.0		

Routinely commute in the St. Louis area between 7:00 AM and 9:00 AM		Frequen	Percent	Valid	Cumulative
Valid	1	195	60.6	100.0	100.0
Missing	System	127	39.4		
Total		322	100.0		

Routinely commute in the St. Louis area between 9:00 AM and 3:00 PM		Frequen	Percent	Valid	Cumulative
Valid	1	45	14.0	100.0	100.0
Missing	System	277	86.0		
Total		322	100.0		

Routinely commute in the St. Louis area between noon and 3:00 PM		Frequen	Percent	Valid	Cumulative
Valid	1	55	17.1	100.0	100.0
Missing	System	267	82.9		
Total		322	100.0		

Routinely commute in the St. Louis area between 3:00 PM and 6:00 PM		Frequen	Percent	Valid	Cumulative
Valid	1	217	67.4	100.0	100.0
Missing	System	105	32.6		
Total		322	100.0		

Routinely commute in the St. Louis area after 6:00 PM

	Frequency	Percent	Valid	Cumulative
Valid 1	145	13.9	100.0	100.0
Missing System	895	86.1		
Total	1040	100.0		

Are you male or female?

	Frequency	Percent	Valid	Cumulative
Valid Male	437	42.0	55.2	55.2
Female	355	34.1	44.8	100.0
Total	792	76.2	100.0	
Missing System	248	23.8		
Total	1040	100.0		

Please choose your age group

	Frequency	Percent	Valid	Cumulative
Valid Under 16	2	.2	.3	.3
16 to 25	84	8.1	10.6	10.8
26 to 40	296	28.5	37.2	48.0
41 to 65	395	38.0	49.6	97.6
Over 65	19	1.8	2.4	100.0
Total	796	76.5	100.0	
Missing System	244	23.5		
Total	1040	100.0		

What was your approximate household income in 2007?

	Frequency	Percent	Valid	Cumulative
Valid Less than \$20,000	14	1.3	1.9	1.9
\$20,000 to \$40,000	80	7.7	10.8	12.7
\$40,001 to \$60,000	118	11.3	16.0	28.7
\$60,001 to \$90,000	141	13.6	19.1	47.8
\$90,001 to \$120,000	155	14.9	21.0	68.7
\$120,001 to \$150,000	62	6.0	8.4	77.1
\$150,001 to \$200,000	61	5.9	8.3	85.4
More than \$200,000	54	5.2	7.3	92.7
I do not know	54	5.2	7.3	100.0
Total	739	71.1	100.0	
Missing System	301	28.9		
Total	1040	100.0		

Home Zip Code

	Frequency	Percent	Valid	Cumulative
Valid 6313	1	.1	.1	.1
30519	1	.1	.1	.2
40517	1	.1	.1	.3
48075	1	.1	.1	.4
62006	1	.1	.1	.5
62025	2	.2	.2	.7
62034	2	.2	.2	.9
62035	1	.1	.1	1.0
62040	2	.2	.2	1.2
62062	2	.2	.2	1.4
62097	1	.1	.1	1.5
62206	1	.1	.1	1.6
62208	2	.2	.2	1.8
62220	1	.1	.1	1.9
62221	5	.5	.5	2.4
62223	1	.1	.1	2.5
62225	1	.1	.1	2.6
62226	2	.2	.2	2.8
62232	1	.1	.1	2.9
62234	4	.4	.4	3.3
62236	2	.2	.2	3.5

	Frequen	Percent	Valid	Cumulative
Valid 1	91	28.3	100.0	100.0
Missing System	231	71.7		
Total	322	100.0		
Missing System	6	1.9		
Total	322	100.0		

Please choose your age group

	Frequen	Percent	Valid	Cumulative
Valid 16 to 25	35	10.9	11.0	11.0
26 to 40	123	38.2	38.8	49.8
41 to 65	152	47.2	47.9	97.8
Over 65	7	2.2	2.2	100.0
Total	317	98.4	100.0	
Missing System	5	1.6		
Total	322	100.0		

What was your approximate household income in 2007?

	Frequen	Percent	Valid	Cumulative
Valid Less than \$20,000	5	1.6	1.7	1.7
\$20,000 to \$40,000	31	9.6	10.4	12.1
\$40,001 to \$60,000	47	14.6	15.8	27.9
\$60,001 to \$90,000	65	20.2	21.8	49.7
\$90,001 to	61	18.9	20.5	70.1
\$120,001 to	30	9.3	10.1	80.2
\$150,001 to	23	7.1	7.7	87.9
More than \$200,000	18	5.6	6.0	94.0
I do not know	18	5.6	6.0	100.0
Total	298	92.5	100.0	
Missing System	24	7.5		
Total	322	100.0		

Home Zip Code

	Frequen	Percent	Valid	Cumulative
Valid 24	7.5	7.5	7.5	7.5
40208	1	.3	.3	7.8
60435	1	.3	.3	8.1
62034	2	.6	.6	8.7
62040	1	.3	.3	9.0
62062	1	.3	.3	9.3
62095	2	.6	.6	9.9
62208	4	1.2	1.2	11.2
62220	1	.3	.3	11.5
62221	1	.3	.3	11.8
62226	2	.6	.6	12.4
62232	1	.3	.3	12.7
62234	2	.6	.6	13.4
62269	2	.6	.6	14.0
62702	1	.3	.3	14.3
63011	11	3.4	3.4	17.7
63012	1	.3	.3	18.0
63017	13	4.0	4.0	22.0
63021	13	4.0	4.0	26.1
63025	3	.9	.9	27.0
63026	8	2.5	2.5	29.5

Are you male or female?

Male	437	55.2%
Female	355	44.8%
Total	792	

Please choose your age group

Under 16	2	0.2%
16 to 25	119	10.7%
26 to 40	419	37.6%
41 to 65	547	49.1%
Over 65	26	2.3%
Total	1113	

What was your approximate household income in 2007?

Less than \$20,000	19	2.0%
\$20,000 to \$40,000	111	11.5%
\$40,001 to \$60,000	165	17.1%
\$60,001 to \$90,000	206	21.3%
\$90,001 to \$120,000	216	22.4%
\$120,001 to \$150,000	92	9.5%
\$150,001 to \$200,000	84	8.7%
More than \$200,000	72	7.5%
Total	965	

62239	1	.1	.1	3.6	63031	5	1.6	1.6	31.1
62249	1	.1	.1	3.7	63034	1	.3	.3	31.4
62254	2	.2	.2	3.9	63038	3	.9	.9	32.3
62269	6	.6	.6	4.5	63042	4	1.2	1.2	33.5
62285	1	.1	.1	4.6	63043	4	1.2	1.2	34.8
62294	4	.4	.4	5.0	63050	1	.3	.3	35.1
62298	4	.4	.4	5.4	63051	2	.6	.6	35.7
62983	1	.1	.1	5.5	63052	1	.3	.3	36.0
63005	15	1.4	1.5	7.0	63069	1	.3	.3	36.3
63010	4	.4	.4	7.5	63077	1	.3	.3	36.6
63011	42	4.0	4.2	11.7	63088	2	.6	.6	37.3
63016	1	.1	.1	11.8	63101	1	.3	.3	37.6
63017	58	5.6	5.8	17.6	63103	2	.6	.6	38.2
63020	1	.1	.1	17.7	63104	3	.9	.9	39.1
63021	52	5.0	5.2	23.0	63105	4	1.2	1.2	40.4
63025	5	.5	.5	23.5	63108	12	3.7	3.7	44.1
63026	14	1.3	1.4	24.9	63109	12	3.7	3.7	47.8
63028	4	.4	.4	25.3	63110	4	1.2	1.2	49.1
63031	13	1.3	1.3	26.6	63111	1	.3	.3	49.4
63033	4	.4	.4	27.0	63112	2	.6	.6	50.0
63034	1	.1	.1	27.1	63114	1	.3	.3	50.3
63038	2	.2	.2	27.3	63116	7	2.2	2.2	52.5
63040	5	.5	.5	27.8	63117	9	2.8	2.8	55.3
63042	4	.4	.4	28.2	63118	2	.6	.6	55.9
63043	12	1.2	1.2	29.4	63119	12	3.7	3.7	59.6
63044	3	.3	.3	29.7	63121	2	.6	.6	60.2
63049	5	.5	.5	30.2	63122	7	2.2	2.2	62.4
63051	4	.4	.4	30.6	63123	5	1.6	1.6	64.0
63052	2	.2	.2	30.8	63124	5	1.6	1.6	65.5
63053	1	.1	.1	30.9	63124-1680	1	.3	.3	65.8
63069	3	.3	.3	31.2	63125	1	.3	.3	66.1
63070	1	.1	.1	31.3	63128	1	.3	.3	66.5
63073	2	.2	.2	31.5	63129	2	.6	.6	67.1
63074	5	.5	.5	32.0	63130	12	3.7	3.7	70.8
63077	1	.1	.1	32.1	63131	11	3.4	3.4	74.2
63080	1	.1	.1	32.2	63132	5	1.6	1.6	75.8
63088	4	.4	.4	32.6	63135	1	.3	.3	76.1
63089	1	.1	.1	32.7	63138	1	.3	.3	76.4
63090	1	.1	.1	32.8	63139	16	5.0	5.0	81.4
63101	2	.2	.2	33.0	63141	9	2.8	2.8	84.2
63103	3	.3	.3	33.3	63143	1	.3	.3	84.5
63104	12	1.2	1.2	34.5	63144	7	2.2	2.2	86.6
63105	17	1.6	1.7	36.3	63146	9	2.8	2.8	89.4
63108	12	1.2	1.2	37.5	63301	5	1.6	1.6	91.0
63109	30	2.9	3.0	40.5	63303	3	.9	.9	91.9
63110	8	.8	.8	41.3	63304	6	1.9	1.9	93.8
63111	3	.3	.3	41.6	63334	1	.3	.3	94.1
63112	6	.6	.6	42.2	63366	2	.6	.6	94.7
63113	1	.1	.1	42.3	63367	2	.6	.6	95.3
63114	14	1.3	1.4	43.7	63368	6	1.9	1.9	97.2
63116	22	2.1	2.2	45.9	63376	3	.9	.9	98.1
63117	26	2.5	2.6	48.5	63401	1	.3	.3	98.4
63118	6	.6	.6	49.1	64134	1	.3	.3	98.8
63119	42	4.0	4.2	53.4	65536	1	.3	.3	99.1
63121	2	.2	.2	53.6	65584	1	.3	.3	99.4
63122	35	3.4	3.5	57.1	72589	1	.3	.3	99.7
63123	28	2.7	2.8	59.9		1	.3	.3	100.0

63124	24	2.3	2.4	62.3
63125	8	.8	.8	63.1
63126	6	.6	.6	63.7
63127	1	.1	.1	63.8
63128	10	1.0	1.0	64.9
63129	14	1.3	1.4	66.3
63130	29	2.8	2.9	69.2
63131	22	2.1	2.2	71.4
63132	23	2.2	2.3	73.7
63133	1	.1	.1	73.8
63135	3	.3	.3	74.1
63136	3	.3	.3	74.4
63137	1	.1	.1	74.5
63138	1	.1	.1	74.6
63139	19	1.8	1.9	76.5
63141	30	2.9	3.0	79.6
63143	20	1.9	2.0	81.6
63144	28	2.7	2.8	84.4
63146	35	3.4	3.5	87.9
63301	9	.9	.9	88.8
63303	17	1.6	1.7	90.5
63304	17	1.6	1.7	92.2
63341	3	.3	.3	92.5
63366	13	1.3	1.3	93.9
63367	8	.8	.8	94.7
63368	13	1.3	1.3	96.0
63376	19	1.8	1.9	97.9
63379	2	.2	.2	98.1
63381	1	.1	.1	98.2
63385	7	.7	.7	98.9
63390	1	.1	.1	99.0
63640	1	.1	.1	99.1
63701	1	.1	.1	99.2
63801	1	.1	.1	99.3
64068	1	.1	.1	99.4
64134	1	.1	.1	99.5
65041	1	.1	.1	99.6
65453	1	.1	.1	99.7
65802	1	.1	.1	99.8
86753	1	.1	.1	99.9
631414	1	.1	.1	100.0
Total	993	95.5	100.0	
Missing System	47	4.5		
Total	1040	100.0		

Total	322	100.0	100.0	
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Work (or School) Zip Code					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	636	1	.1	.1	.1
	6310	1	.1	.1	.2
	24019	1	.1	.1	.3
	53108	1	.1	.1	.4
	53114	1	.1	.1	.5
	53141	1	.1	.1	.6
	60311	1	.1	.1	.7
	62025	1	.1	.1	.9
	62040	1	.1	.1	1.0
	62206	2	.2	.2	1.2

Work (or School) Zip Code					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		38	11.8	11.8	11.8
	29613	1	.3	.3	12.1
	40202	1	.3	.3	12.4
	60435	1	.3	.3	12.7
	62206	1	.3	.3	13.0
	62704	1	.3	.3	13.4
	63001	1	.3	.3	13.7
	63005	6	1.9	1.9	15.5
	63010	1	.3	.3	15.8
	63011	2	.6	.6	16.5

62207	1	.1	.1	1.3
62223	3	.3	.3	1.6
62269	2	.2	.2	1.8
63005	19	1.8	2.0	3.9
63010	1	.1	.1	4.0
63011	8	.8	.9	4.8
63012	1	.1	.1	4.9
63017	64	6.2	6.8	11.8
63021	4	.4	.4	12.2
63026	12	1.2	1.3	13.5
63031	1	.1	.1	13.6
63040	1	.1	.1	13.7
63042	14	1.3	1.5	15.2
63043	16	1.5	1.7	16.9
63044	6	.6	.6	17.5
63045	8	.8	.9	18.4
63051	1	.1	.1	18.5
63074	1	.1	.1	18.6
63084	1	.1	.1	18.7
63088	1	.1	.1	18.8
63090	2	.2	.2	19.0
63099	1	.1	.1	19.1
63101	36	3.5	3.9	23.0
63102	39	3.8	4.2	27.2
63103	51	4.9	5.5	32.6
63104	6	.6	.6	33.3
63105	89	8.6	9.5	42.8
63106	4	.4	.4	43.2
63107	3	.3	.3	43.5
63108	17	1.6	1.8	45.3
63109	2	.2	.2	45.6
63110	39	3.8	4.2	49.7
63112	4	.4	.4	50.2
63114	16	1.5	1.7	51.9
63116	2	.2	.2	52.1
63117	23	2.2	2.5	54.5
63118	10	1.0	1.1	55.6
63119	16	1.5	1.7	57.3
63120	3	.3	.3	57.6
63121	11	1.1	1.2	58.8
63122	12	1.2	1.3	60.1
63124	43	4.1	4.6	64.7
63125	2	.2	.2	64.9
63127	5	.5	.5	65.5
63128	6	.6	.6	66.1
63129	2	.2	.2	66.3
63130	15	1.4	1.6	67.9
63131	36	3.5	3.9	71.8
63132	34	3.3	3.6	75.4
63133	2	.2	.2	75.6
63134	4	.4	.4	76.0
63135	1	.1	.1	76.1
63136	8	.8	.9	77.0
63138	1	.1	.1	77.1
63139	14	1.3	1.5	78.6
63141	70	6.7	7.5	86.1
63142	1	.1	.1	86.2
63143	4	.4	.4	86.6
63144	27	2.6	2.9	89.5
63145	1	.1	.1	89.6

63014	1	.3	.3	16.8
63017	16	5.0	5.0	21.7
63021	2	.6	.6	22.4
63026	2	.6	.6	23.0
63031	1	.3	.3	23.3
63033	2	.6	.6	23.9
63034	1	.3	.3	24.2
63043	5	1.6	1.6	25.8
63044	7	2.2	2.2	28.0
63049	1	.3	.3	28.3
63051	1	.3	.3	28.6
63101	11	3.4	3.4	32.0
63102	10	3.1	3.1	35.1
63103	12	3.7	3.7	38.8
63105	28	8.7	8.7	47.5
63106	1	.3	.3	47.8
63108	7	2.2	2.2	50.0
63110	21	6.5	6.5	56.5
63112	4	1.2	1.2	57.8
63114	2	.6	.6	58.4
63116	2	.6	.6	59.0
63117	6	1.9	1.9	60.9
63118	3	.9	.9	61.8
63119	5	1.6	1.6	63.4
63121	6	1.9	1.9	65.2
63122	1	.3	.3	65.5
63123	1	.3	.3	65.8
63124	7	2.2	2.2	68.0
63126	1	.3	.3	68.3
63127	2	.6	.6	68.9
63130	7	2.2	2.2	71.1
63131	9	2.8	2.8	73.9
63132	9	2.8	2.8	76.7
63133	2	.6	.6	77.3
63134	3	.9	.9	78.3
63138	1	.3	.3	78.6
63139	6	1.9	1.9	80.4
6314	1	.3	.3	80.7
63141	21	6.5	6.5	87.3
63141-001	1	.3	.3	87.6
63143	2	.6	.6	88.2
63144	11	3.4	3.4	91.6
63145	1	.3	.3	91.9
63146	7	2.2	2.2	94.1
63155	1	.3	.3	94.4
63166	2	.6	.6	95.0
63167	2	.6	.6	95.7
63301	1	.3	.3	96.0
63367	1	.3	.3	96.3
63368	3	.9	.9	97.2
63376	3	.9	.9	98.1
63401	1	.3	.3	98.4
63501	1	.3	.3	98.8
64081	1	.3	.3	99.1
72859	1	.3	.3	99.4
Boeing	1	.3	.3	99.7
	1	.3	.3	100.0
Total	322	100.0	100.0	

63146	27	2.6	2.9	92.5
63147	3	.3	.3	92.8
63155	2	.2	.2	93.0
63164	1	.1	.1	93.2
63166	2	.2	.2	93.4
63167	4	.4	.4	93.8
63180	2	.2	.2	94.0
63301	6	.6	.6	94.7
63303	4	.4	.4	95.1
63304	8	.8	.9	95.9
63317	1	.1	.1	96.0
63336	1	.1	.1	96.1
63366	3	.3	.3	96.5
63367	1	.1	.1	96.6
63368	13	1.3	1.4	98.0
63376	6	.6	.6	98.6
63385	2	.2	.2	98.8
63390	1	.1	.1	98.9
63701	2	.2	.2	99.1
63801	1	.1	.1	99.3
64068	1	.1	.1	99.4
64109	1	.1	.1	99.5
65807	1	.1	.1	99.6
66260	1	.1	.1	99.7
68178	1	.1	.1	99.8
90210	1	.1	.1	99.9
633026	1	.1	.1	100.0
Total	935	89.9	100.0	
Missing System	105	10.1		
Total	1040	100.0		

American Indian	17	1.3%
Asian	32	2.4%
Black or African-American	31	2.3%
Hispanic or Latino	12	0.9%
White or Caucasian	1210	91.0%
Other	27	2.0%
	1329	

American Indian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	13	1.3	100.0	100.0
Missing System	1027	98.8		
Total	1040	100.0		

American Indian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	4	1.2	100.0	100.0
Missing System	318	98.8		
Total	322	100.0		

Asian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	23	2.2	100.0	100.0
Missing System	1017	97.8		
Total	1040	100.0		

Asian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	9	2.8	100.0	100.0
Missing System	313	97.2		
Total	322	100.0		

Black or African-American

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	19	1.8	100.0	100.0
Missing System	1021	98.2		
Total	1040	100.0		

Black or African-American

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	12	3.7	100.0	100.0
Missing System	310	96.3		
Total	322	100.0		

Hispanic or Latino

Hispanic or Latino

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	10	1.0	100.0	100.0
Missing System	1030	99.0		
Total	1040	100.0		

White or Caucasian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	926	89.0	100.0	100.0
Missing System	114	11.0		
Total	1040	100.0		

Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	18	1.7	100.0	100.0
Missing System	1022	98.3		
Total	1040	100.0		

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	.6	100.0	100.0
Missing System	320	99.4		
Total	322	100.0		

White or Caucasian

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	284	88.2	100.0	100.0
Missing System	38	11.8		
Total	322	100.0		

Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	9	2.8	100.0	100.0
Missing System	313	97.2		
Total	322	100.0		

APPENDIX B

Crash Analysis of Before and After I-64 Full-Closure 2008 Annual Report

July 2009

Missouri S&T

Dr. Hojong Baik and Daxiao Liu (Student)

Executive Summary

On January 2, 2008, the Missouri Department of Transportation (MoDOT) closed I-64 for reconstruction purposes. During the planning stages of this reconstruction project, the plan to close all lanes of roadways was met with concern from many aspects, inciting questions from traffic safety engineers and even the general public alike: *Could closing the roadway possibly contribute to more (or less) crashes than before? And, if noticeable changes existed in the number and types of crashes, are the changes due to closing the roadway or other influencing factors?*

This study aims to answer these questions by examining crash data before and after the closure, and by providing objective explanations to the changes if any. To achieve this goal, this study conducts two analyses (i.e., Crash Analysis and Crash Rate analysis). In this report, we describe basic methods applied to the analyses, the data sets acquired for the analyses, and resulting conclusions. This study is an on-going research project, and thus will be continued to extend the analyses with more crash data whenever it is available. The main findings from two analyses are summarized as follow:

Crash Analysis:

The research team evaluated 5-year (2004-2008) crashes data that occurred on 16 different roadways in the vicinity of the I-64 closure. Using the data set, 1-year (i.e., 2008) post-closure crashes are compared to 4-year (2004-2007) pre-closure crashes in various ways. Table 1 and Figures 1-3 show the total number of crashes on each routes investigated. The major findings from the crash analysis are as follow:

- 1) Compared to year 2007, the number of crashes in 2008 slightly increased in the routes such as I-70 (4%), I-44 (4%), I-55 (5%) and MO 100 (6%) whereas the number decreased in the routes such as I-270, I-170, MO 340, US40/I-64 and MO141. Other routes almost stayed at the level same.
- 2) It is found that the crash increase on I-70 in 2008 was partly due to the record breaking heavy rain in 2008. This finding is confirmed by figure S-37 (Appendix page 57) showing the increasing trend of the out-of-control crashes on the same highway in 2008.
- 3) In cases of MO100 or I-70, the increasing trend started before the I-64 closure (i.e., before 2008). So, it is hard to infer whether the I-64 closure causes the crash to increase.
- 4) Although each route shows its own trend, the overall crashes on all three types of highways (i.e., interstate, MO, and US highways) have decreased in 2008.
- 5) The observational inspections conducted in this study leads us to a tentative conclusion that there is no strong evidence proving that I-64 closure contributed to the crash increase on the highways that are potentially influenced by the closure. Continuation of

this crash analysis through 2009 and 2010 will provide additional information that will either confirmed the tentative conclusion or provide information that changes this initial conclusion.

Table 1 shows the trend in total crashes for the various highways identified as highways that could be potentially impacted by the I-64 construction project.

Table 1: Total Crashes by year (2004 - 2008)

	Route	2004	2005	2006	2007	2008
Interstate Highway	I-44	1,100	1,061	1,037	1,086	1,126
	I-270	2,103	2,201	2,302	2,287	2,083
	I-64	1,624	1,610	1,494	1,205	717
	I-70	1,907	1,998	2,004	2,072	2,161
	I-170	906	827	904	873	815
	I-55	964	948	963	948	994
	All IS	8,604	8,645	8,704	8,471	7,896
MO Highway	MO366	655	645	652	519	526
	MO30	1,298	1,297	1,049	1,048	941
	MO100	1,179	1,085	1,019	1,086	1,146
	MO115	455	432	382	370	385
	MO180	879	822	721	689	675
	MO340	1,068	935	1,059	1,053	998
	All MO	5,534	5,216	4,882	4,765	4,671
US highway and ExpressWay	MO141	503	566	504	589	503
	RtD	728	682	636	690	699
	US61	853	828	819	791	761
	US67	484	386	396	358	345
	US40	489	536	553	529	344
	All US	3,057	2,998	2,908	2,957	2,652
Overall		17,195	16,859	16,494	16,193	15,219

Index value provides an easy way to display and show trends or changes. An established base year can be used to compare against other years to show increases or decreases from the base year. Example – 100 crashes occurred in the base year and 90 crashes occurred in the next year – the index value would be 0.9 (90 divided by 100) or a 10 percent reduction. Year 2004 is the based year and Figure 1 through 3 shows the resulting index values each highway type group.

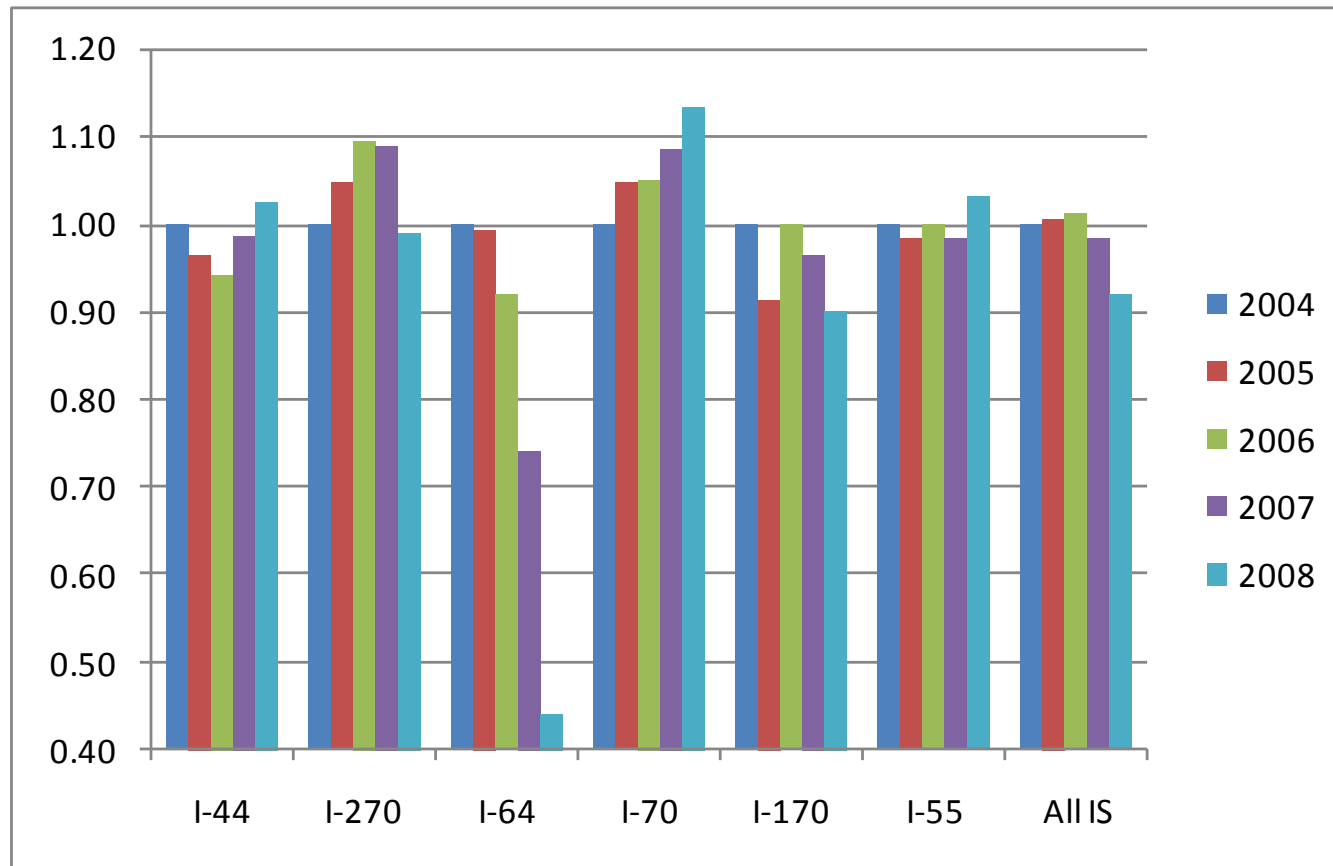


Figure 1: 5-year Crashes, Interstate Highway (2004 through 2008)

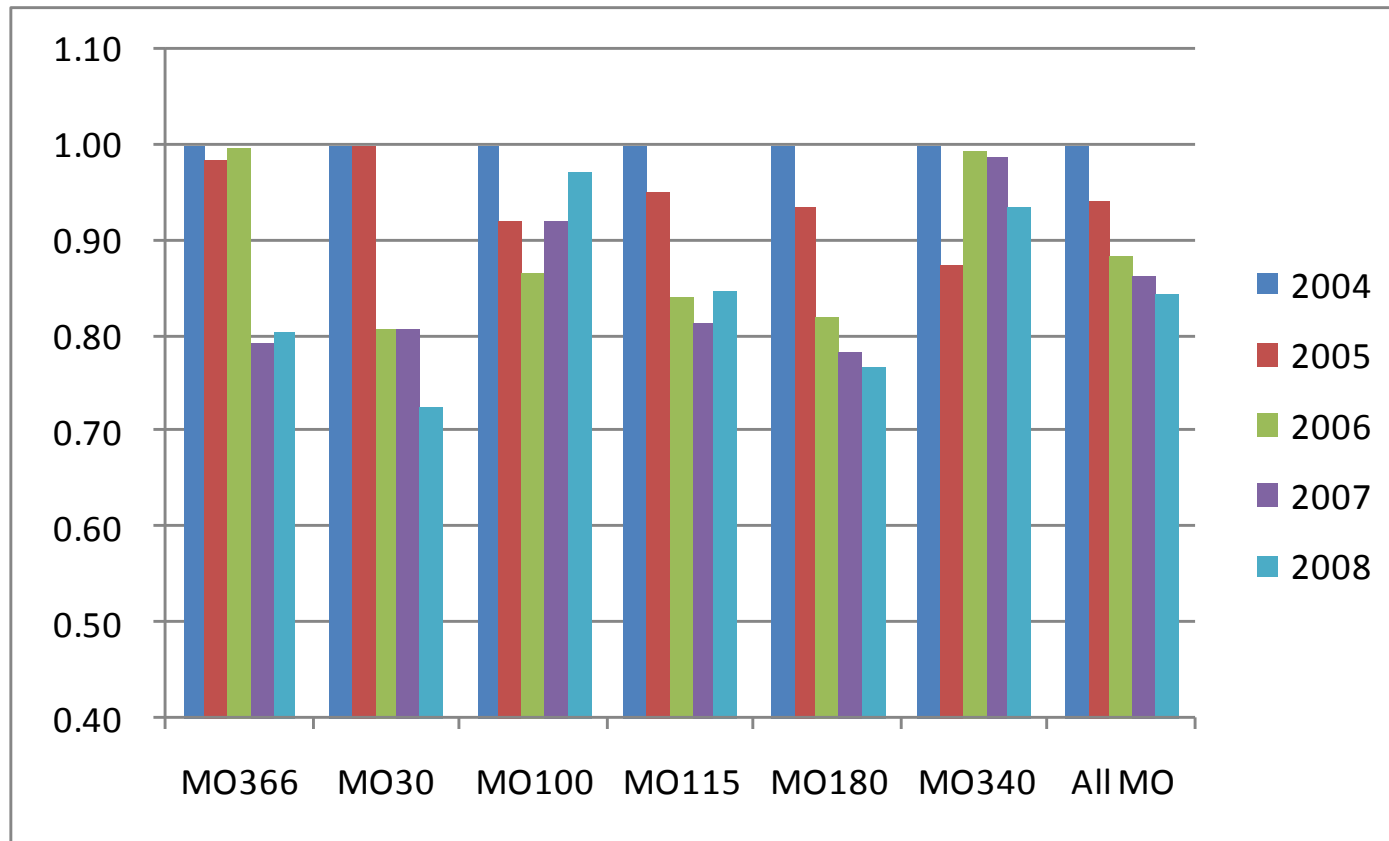


Figure 2: 5-year Crashes, MO Highway (2004 through 2008)

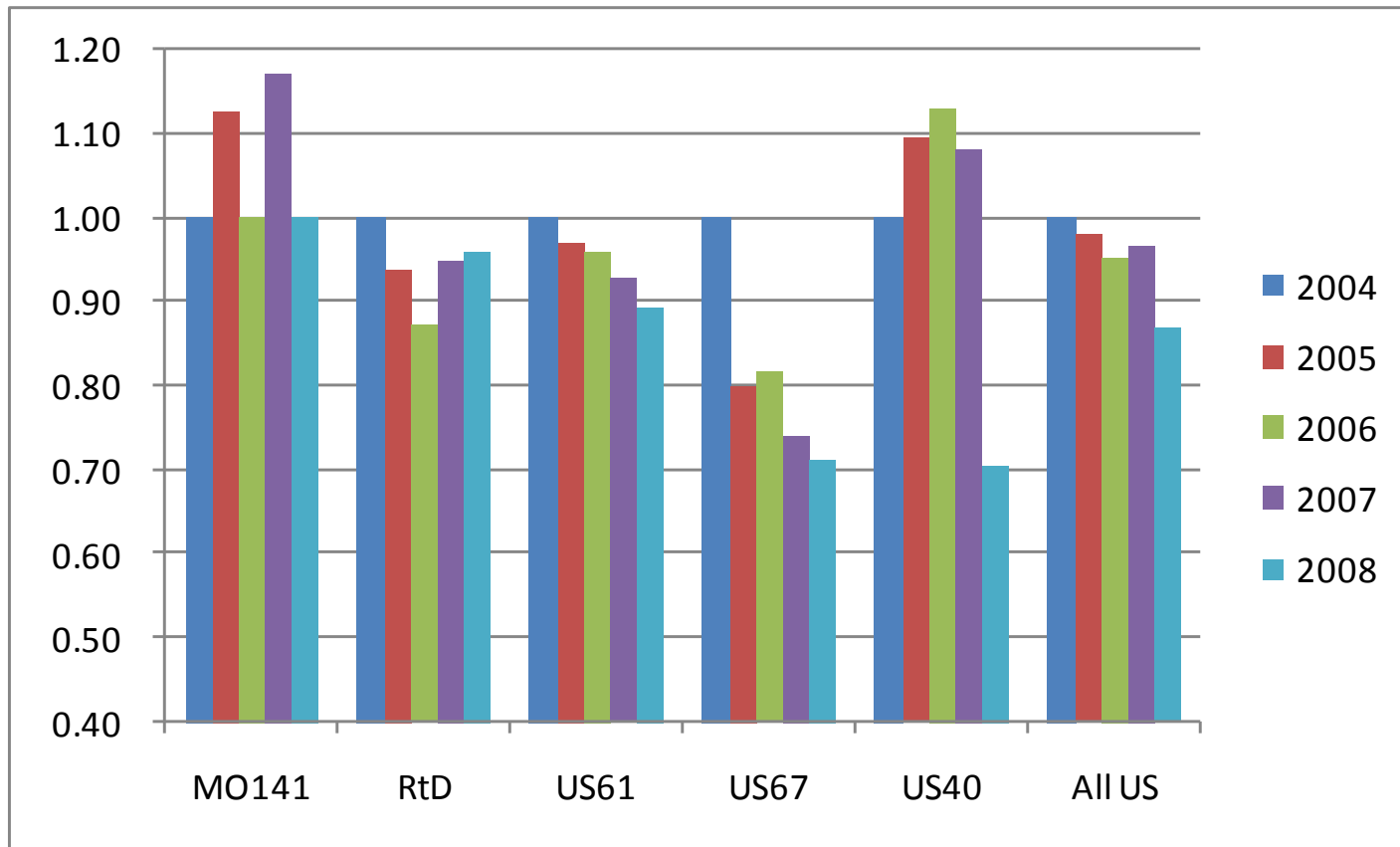


Figure 3: 5-year Crashes, US Routes and Expressways (2004 through 2008)

Crash Rates Analysis:

The crash rate represents the intensity of crashes relative to total vehicle miles traveled. For example, if roadway A shows a higher crash rate than roadway B, it indicates that roadway A is more vulnerable to crashes than roadway B in case the traffic volume and the roadway lengths of both roadways are same (i.e., under the same condition.) Table 2 and Figures 4 and 5 present the crash rates on the roadway investigated, and the major findings from the crash analysis are as follow:

- 1) Compared to year 2007, crash rates on most routes either decrease or remain about same in 2008 except for six routes including I-70 (4%), I-55 (6%), MO 366 (4%), MO100 (8%), MO115 (6%) and MO Route D (3%).
- 2) However, it is hard to conclude that I-64 closure caused the crash rate to increase in year 2008 since either this increasing trend started before the I-64 closure or less the highest crash rate over the four baseline years (2005 through 2007).
- 3) The I-55 Southbound section showed an increase in 2008, further investigation is recommended when more crash data are available.
- 4) US-61 shows the highest crash rates over the evaluated years, but the crash rate decreased in 2008 as compared to 2007. Since US-61 is routed over both US-40 and US-67 in the study area, some recent indications have risen that crashes might be logged to the wrong route causing a higher rate for US-61 and lesser for US-40 and US-67.

Table 2: All Crash Rate (Both Directions)

		2004	2005	2006	2007	2008
Interstate Highway	I-44	162	157	150	156	157
	I-270	154	161	165	162	155
	I-64	226	226	207	169	119
	I-70	196	205	215	218	226
	I-170	217	199	215	206	193
	I-55	153	151	143	139	147
MO Highway	MO366	392	396	406	321	335
	MO30	568	579	465	466	427
	MO100	553	521	498	530	572
	MO115	645	611	647	633	673
	MO180	461	441	444	424	425
	MO340	516	471	465	462	433
US highway and ExpressWay	MO141	350	404	353	412	359
	RtD	407	388	364	396	409
	US40	100	110	120	116	77
	US67	346	290	325	294	268
	US61	900	894	800	833	818

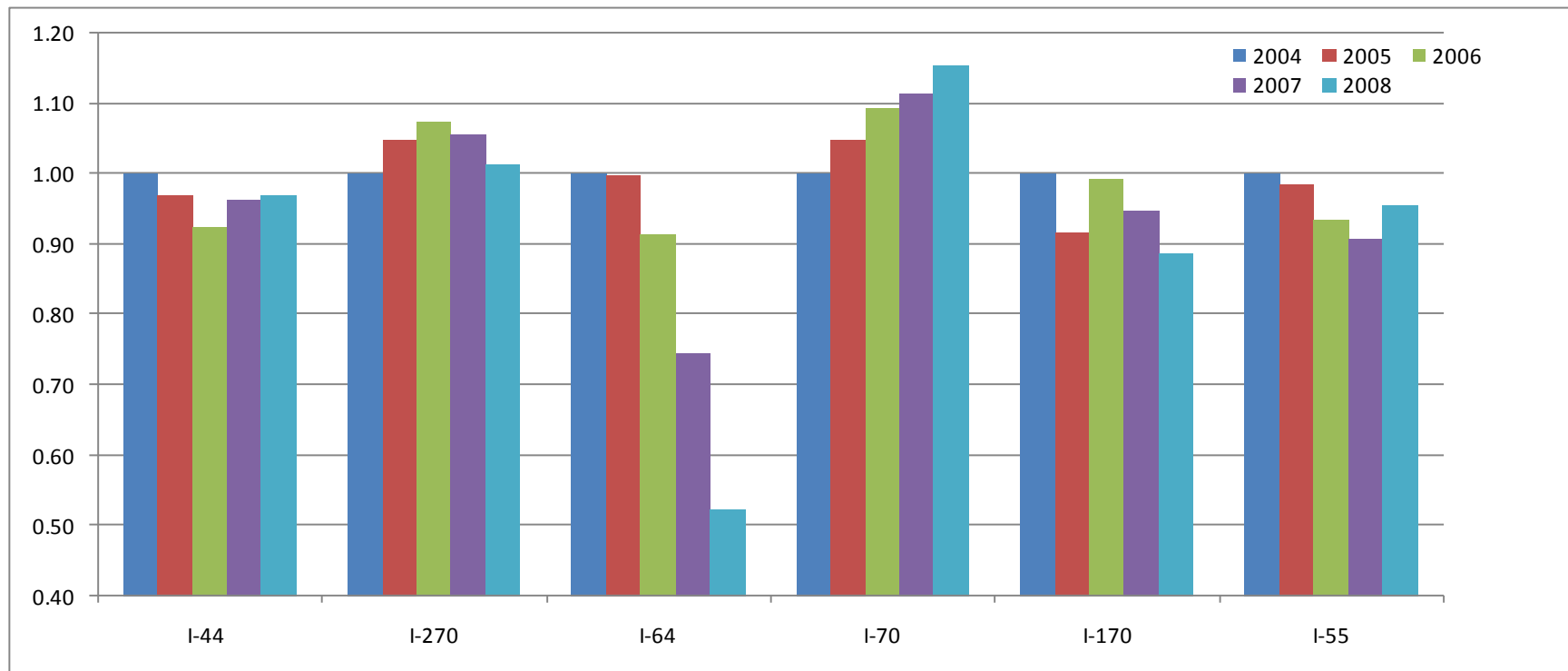


Figure 4: 5-year Relative Crash Rate, Interstate Highway (Both Directions, Base year: 2004)

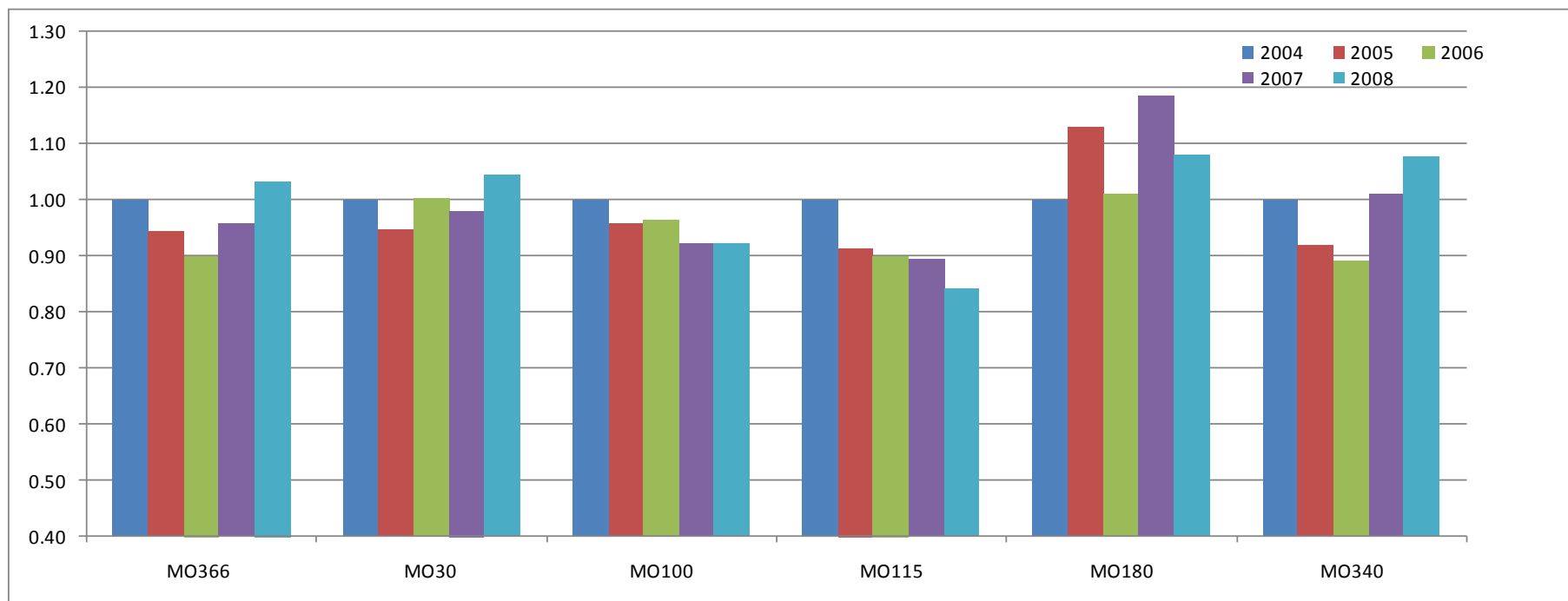


Figure 5: 5-year Relative Crash Rate, MO Highway (Both Directions, Base year: 2004)

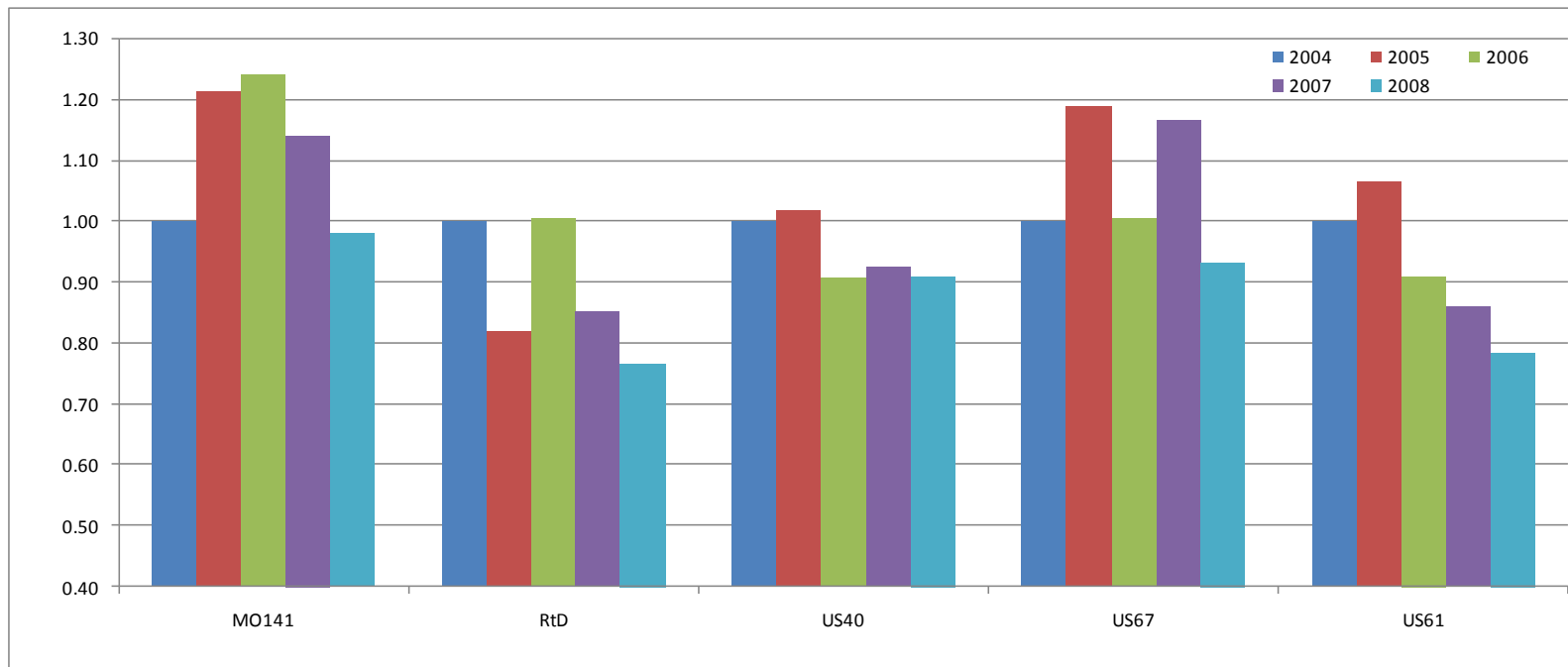


Figure 6: 5-year Relative Crash Rate, US Highway and Expressway (Both Directions, Base year: 2004)

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1 Introduction

1.1 Main goal and objectives of this study

On January 2, 2008, the Missouri Department of Transportation (MoDOT) closed I-64 for reconstruction purposes. During the planning stages of this reconstruction project, the plan to close all lanes of roadways was met with concern from many aspects, inciting questions from traffic safety engineers and even the general public alike: *Could closing the roadway possibly contribute to more (or less) crashes than before? And, if noticeable changes existed in the number and types of crashes, are the changes due to closing the roadway or other influencing factors?*

This study aims to answer these questions by examining crash data before and after the closure, and by providing objective explanations to the changes if any. In other words, this study will decide whether the I-64 project impact the crashes during the construction period. In order to achieve the goal, we set two objectives: 1) to examine crash data collected from roadways in the vicinity of the I-64 closure area, and 2) identify analytical evidences proving any impacts of I-64 closure on the crashes.

1.2 Methodology

The crash analysis is considered as a complicate and challenging task. This is mainly because there are multiple factors are involved in crashes. For instance, the contributing factors could be roadway, congestion, weather, human error or combination of these factors. In order to investigate the multifaceted contributing factors efficiently, following three procedural steps are set up in this study:

Step 1 (data acquirement): As the first step of the analysis, the crash data will be obtained from MoDOT's Transportation Management System (TMS) database for selected roadways whose traffic patterns could potentially be influenced by I-64 closure. In addition to the crash data, annual average daily traffic (AADT) is also acquired to identify any causal relationship between traffic volume and crashes.

Step 2 (develop a data retrieving tool): This study develops a computer programming tool that can efficiently and promptly extract the information required for the analysis from the crash data. The tool is also designed to effectively represent the extracted data in a various formats such as graphs and tables so that it can provide the analysts with a flexible tool for examining the multifaceted crash data.

Step 3 (analyzing the crash data): Adopting observational before-after analysis methods, this step examines the data extracted from the crash data using the tool developed in step 2 from different angles. For example, the crash data is extracted in a chronological sequence with different influencing factors such as cause, severity type, weather, etc, and then examined to identify any evidence proving the impact of I-64 closure on the crashes on roadway around the construction area.

This crash analysis is an on-going task. The results reported in this study are based on 5-year crash data that includes 4-year of before and 1-year of after the I-64 closure data. In order to include more data points after the closure, the analysis will be repeated when full set of 2009 crash data is available. In the meantime, literature reviews will be carried out and more scientific before-after analysis methods will be tested to the data sets.

2 Data Collection

2.1 Crash Data

MoDOT provided the research team with the crash data and the traffic volume data for 17 roadways selected by the team. Table S1 summarizes the list of roadways and data sets that are to be acquired. Besides crash data, AADT is also requested to investigate potential relationship between crashes and traffic volume. In order to find historical trend in cashes, all data is obtained for 5-year time period (i.e., 2004-2008). In the table, cells in green indicate the routes and data sets that are analyzed and included in this study and other data sets in pink are to be analyzed in the near future.

Table S1: Crash and AADT data collected

Route	From	To	Crash Data	AADT
I-44	Route 141	I-55	2004 through 2008	2004 through 2008
I-55	St. Louis County	Illinois State Line	2004 through 2008	2004 through 2008
I-64	St. Louis County	I-55	2004 through 2008	2004 through 2008
I-70	St. Louis County	I-55	2004 through 2008	2004 through 2008
I-170	i-270	I-64	2004 through 2008	2004 through 2008
I-270	370	I-55	2004 through 2008	2004 through 2008
30	St. Louis County	I-55	2004 through 2008	2004 through 2008
61-67	I-55	I-270	2004 through 2008	2004 through 2008
100	Route 141	Chouteau Avenue	2004 through 2008	2004 through 2008
115	I-70	Kingshighway Blvd.	2004 through 2008	2004 through 2008
141	I-44	Route 340	2004 through 2008	2004 through 2008
180	I-270	Kingshighway Blvd.	2004 through 2008	2004 through 2008
340	Route 141	Skinker Parkway	2004 through 2008	2004 through 2008
364 - D	St. Louis County	Skinker Parkway	2004 through 2008	2004 through 2008
366	I-44	Route 30	2004 through 2008	2004 through 2008
Clayton Road	Route 141	Skinker Blvd.	2004 through 2008	2004 through 2008
Forest Park Parkway	I-170	Kingshighway Blvd.	2004 through 2008	2004 through 2008
Hanley Road	Paage Avenue	Manchester Road	2004 through 2008	2004 through 2008
Ladue Road	Route 141	I-170	2004 through 2008	2004 through 2008

(Green: routes included in this study, pink: routes to be included in the near future.)

Table S2 shows an example of the crash data provided by MoDOT. As seen in the table, each crash record includes information on the location by a route log mile system, direction, time, severity, cause, surface, light, weather, etc. Using the data sets provided, a data dictionary is developed for each categorical field such as severity type, cause, weather, light, etc. Then, the data dictionaries are used as basic information in developing the data extraction tool.

Table S2: Crash Data on I-44 (Sample)

County	Dir	Travelway	Cont Log	Accident Class	Accident Date	Severity Rating	Image #	Intersection #	Log Unit	Intre	Intchg	Crpd	Light Cond	Road Surf Con	Weather Conc	Tway Id	Property Dam	Day of Week	Time
ST. LOUIS	IS	44	E	272.383	REAR END	9/4/2006	PROPERTY DAMAGE ONLY	60099048	307719	14.173	Y	Y	DAYLIGHT	WET	CLOUDY	9	OTHER	MON	1452
ST. LOUIS	IS	44	E	272.387	BACKING	7/19/2006	PROPERTY DAMAGE ONLY	3060005461	307719	14.177	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	1100
ST. LOUIS	IS	44	E	272.391	REAR END	8/6/2004	PROPERTY DAMAGE ONLY	40094836	307719	14.181	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	FRI	640
ST. LOUIS	IS	44	E	272.396	REAR END	3/21/2004	PROPERTY DAMAGE ONLY	40032463	307719	14.186	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	SUN	1225
ST. LOUIS	IS	44	E	272.397	REAR END	6/22/2006	MINOR INJURY	60064432	307719	14.187	Y	Y	DAYLIGHT	WET	RAIN	9	NONE	THU	1700
ST. LOUIS	IS	44	E	272.399	REAR END	12/9/2004	PROPERTY DAMAGE ONLY	40149538	307719	14.189	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	THU	737
ST. LOUIS	IS	44	E	272.403	REAR END	12/18/2005	PROPERTY DAMAGE ONLY	50139513	307719	14.193	Y	Y	DAYLIGHT	DRY	CLOUDY	9	NONE	SUN	1125
ST. LOUIS	IS	44	E	272.404	REAR END	4/26/2005	PROPERTY DAMAGE ONLY	50050215	307719	14.194	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	TUE	835
ST. LOUIS	IS	44	E	272.406	REAR END	2/18/2004	PROPERTY DAMAGE ONLY	40026233	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	930
ST. LOUIS	IS	44	E	272.406	REAR END	3/19/2004	PROPERTY DAMAGE ONLY	40032443	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	FRI	645
ST. LOUIS	IS	44	E	272.406	REAR END	3/22/2004	PROPERTY DAMAGE ONLY	40032535	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	MON	1325
ST. LOUIS	IS	44	E	272.406	REAR END	6/1/2004	PROPERTY DAMAGE ONLY	40074040	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	TUE	1515
ST. LOUIS	IS	44	E	272.406	REAR END	7/8/2004	PROPERTY DAMAGE ONLY	40084142	307719	14.196	Y	Y	DARK W/ STREET LIGHTS ON	DRY	CLEAR	9	NONE	THU	2115
ST. LOUIS	IS	44	E	272.406	REAR END	3/2/2005	PROPERTY DAMAGE ONLY	50032008	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	805
ST. LOUIS	IS	44	E	272.406	OUT OF CONTROL	7/4/2005	PROPERTY DAMAGE ONLY	50081177	307719	14.196	Y	Y	DAYLIGHT	WET	CLOUDY	9	NONE	MON	1430
ST. LOUIS	IS	44	E	272.406	REAR END	8/13/2005	PROPERTY DAMAGE ONLY	50093364	307719	14.196	Y	Y	DARK W/ STREET LIGHTS OFF	WET	CLOUDY	9	NONE	SAT	2127
ST. LOUIS	IS	44	E	272.406	PASSING	9/26/2006	PROPERTY DAMAGE ONLY	60099480	307719	14.196	Y	Y	DARK W/ STREET LIGHTS ON	DRY	CLEAR	9	NONE	TUE	543
ST. LOUIS	IS	44	E	272.406	BACKING	2/12/2007	PROPERTY DAMAGE ONLY	70026787	307719	14.196	Y	Y	DAYLIGHT	DRY	CLOUDY	9	NONE	MON	720
ST. LOUIS	IS	44	E	272.406	REAR END	1/31/2007	PROPERTY DAMAGE ONLY	70036507	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	658
ST. LOUIS	IS	44	E	272.406	REAR END	4/3/2007	MINOR INJURY	70051925	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	TUE	814
ST. LOUIS	IS	44	E	272.406	REAR END	5/7/2007	MINOR INJURY	70062486	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	MON	1555
ST. LOUIS	IS	44	E	272.406	REAR END	5/23/2007	PROPERTY DAMAGE ONLY	70067866	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	1355
ST. LOUIS	IS	44	E	272.406	REAR END	6/25/2007	PROPERTY DAMAGE ONLY	70079777	307719	14.196	Y	Y	DAYLIGHT	DRY	CLOUDY	9	NONE	MON	1255
ST. LOUIS	IS	44	E	272.406	REAR END	8/10/2007	PROPERTY DAMAGE ONLY	70099522	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	FRI	1810
ST. LOUIS	IS	44	E	272.406	REAR END	2/23/2008	PROPERTY DAMAGE ONLY	80023215	307719	14.196	Y	Y	DAYLIGHT	WET	CLEAR	9	NONE	SAT	1505
ST. LOUIS	IS	44	E	272.406	REAR END	2/26/2008	MINOR INJURY	80023257	307719	14.196	Y	Y	DAYLIGHT	DRY	CLOUDY	9	NONE	TUE	1630
ST. LOUIS	IS	44	E	272.406	PASSING	5/3/2008	PROPERTY DAMAGE ONLY	80061502	307719	14.196	Y	Y	DAYLIGHT	DRY	CLOUDY	9	NONE	SAT	1100
ST. LOUIS	IS	44	E	272.406	OUT OF CONTROL	8/4/2008	MINOR INJURY	80112531	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	MON	915
ST. LOUIS	IS	44	E	272.406	REAR END	8/22/2008	PROPERTY DAMAGE ONLY	80114781	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	FRI	745
ST. LOUIS	IS	44	E	272.406	REAR END	9/9/2008	MINOR INJURY	80126635	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	TUE	700
ST. LOUIS	IS	44	E	272.406	DEER	10/18/2008	PROPERTY DAMAGE ONLY	80134538	307719	14.196	Y	Y	DARK W/ STREET LIGHTS ON	DRY	CLEAR	9	NONE	SAT	100
ST. LOUIS	IS	44	E	272.406	REAR END	3/17/2004	PROPERTY DAMAGE ONLY	1040017412	307719	14.196	Y	Y	DAYLIGHT	DRY	CLEAR	9	NONE	WED	650

It should be noted that when a crash happened at an interchange (or intersection) of a roadway is reported, it could be reported at either of the intersecting roadways. To avoid any practical confusion, MoDOT applies a hierarchical rule that entitles the primary road to the roadway which is higher in the highway system hierarchy, and the secondary to the other roadway. For example, if a crash happened at the interchange of I-44 E and MO 141 E, it is reported on I-44 as the primary roadway and MO141 as a secondary roadway. Depending on what type of roadway is used in the analysis, two different results can be obtained. For the consistency and a realistic view of what is happening, this report includes crashes occurring on the mainline roadway to mainline roadway and crashes occurring within the interchanges to the secondary roadway.

The location of each crash is reported using a continuous log system where a crash location is measured from a certain starting point of the roadway within the state to the crash location. It is pointed out that AADT data is reported using a single logging system for both directions, but the crash data is reported using two logging systems that are different by direction. For example, AADT data on I-44 in St. Louis are recorded in miles ranged from 272 to 290 mile for both directions, but crashes on I-44 E are recorded in the same range of 272-290 mile, but crashes on I-44 W is recorded in the range of 0-18 mile. It is believed that adjustment of log system is doable, but mainly due to lack of time, crash rate analysis that requires the AADT information is based on one way in this study. However, the crash analysis that does not require any log information considers all crashes for both directions.

Very few records are found to be incomplete (see Table S3) and are ignored in the analysis assuming that the impact of the elimination is negligible.

Table S3: Missing Record Information in I-55SB BROWSER

1	County	Desg	TravelwayDir	Cont Log	Accident (Accident Date)	Severity	R Image #	Intersect	Log Unit	Intrsc	Intrchg	Grpd	Light Cond	Road Surf	Weather (Tway Id	Property (Day of We	Time
1994	ST. LOUIS	IS	55 S	12.33	PASSING	10/12/2006	PROPERTY 60111749	313256	4.268	Y	Y		DAYLIGHT DRY	CLEAR	13 NONE	THU	1220
1995	ST. LOUIS	IS	55 S	12.33	REAR END	12/10/2006	PROPERTY 60138134	313256	4.268	Y	Y		DARK W/DRY	CLOUDY	13 NONE	SUN	1830
1996	ST. LOUIS	IS	55 S	12.33	REAR END	4/20/2007	MINOR IN 70057321	313256	4.268	Y	Y		DAYLIGHT DRY	CLEAR	13 NONE	FRI	1015
1997	ST. LOUIS	IS	55 S	12.33						Y	Y		DARK W/DRY	CLEAR	13 NONE	FRI	2356
1998	ST. LOUIS	IS	55 S	12.33	PASSING	11/10/2007	PROPERTY 70129340	313256	4.268	Y	Y		DAYLIGHT DRY	CLEAR	13 NONE	SAT	1259
1999	ST. LOUIS	IS	55 S	12.33	REAR END	11/26/2007	PROPERTY 70129684	313256	4.268	Y	Y		DAYLIGHT WET	RAIN	13 NONE	MON	1225
2000	ST. LOUIS	IS	55 S	12.33	REAR END	12/22/2007	PROPERTY 70140794	313256	4.268	Y	Y		DAYLIGHT DRY	CLEAR	13 NONE	SAT	825
2001	ST. LOUIS	IS	55 S	12.33	REAR END	1/25/2008	PROPERTY 80012033	313256	4.268	Y	Y		DARK W/DRY	CLEAR	13 NONE	FRI	2210
2002	ST. LOUIS	IS	55 S	12.33	OUT OF CL	3/18/2008	PROPERTY 80036800	313256	4.268	Y	Y		NOT STAT WET	CLOUDY	13 NONE	TUE	800
2003	ST. LOUIS	IS	55 S	12.33	REAR END	3/24/2008	PROPERTY 80036910	313256	4.268	Y	Y		DAYLIGHT WET	CLEAR	13 NONE	MON	900

2.2 AADT Data

Table S4 shows a sample of AADT data obtained from MODOT. As seen in the table, AADT data includes information on segment name, starting and ending continuous logs, direction, year, and AADT traffic counts. Directions for certain road sections are reported as 'U' rather than either 'E', 'W', 'S' or 'N' indicating an undivided roadway. In this case, it is assumed that the AADT is equally allocated to both directions.

Table S4: AADT Data

Missouri Department of Transportation
Transportation Planning
Traffic Information (TR50)
Sort: Year

June 2, 2009
10:58:31 AM

TR50Y1

2008 AADT

ST. LOUIS COUNTY

IS 270 E (Travelway Id : 6135)

Traffic Information (TR50)

Sort : Year

Description	Continuous Beg Log	Continuous End Log	Dir	Site ID	St Svs	FC	Section	Year	Quantity
IS 55 to MO 21	0.545	2.145	E		IS	IS	1	2008	77,902
			W		IS	IS			64,237
MO 21 to MO 30	2.145	3.915	E	742	IS	IS	1	2008	74,423
			W		IS	IS			71,448
MO 30 to IS 44	3.915	6.128	E		IS	IS	1	2008	80,396
			W		IS	IS			77,200
IS 44 to BIG BEND BLVD	6.128	7.634	E	736	IS	IS	2	2008	73,831
			W		IS	IS			72,574
BIG BEND BLVD to DOUGHER	7.634	8.734	E		IS	IS	2	2008	83,741
			W		IS	IS			82,347
DOUGHERTY FERRY RD to M	8.734	10.260	E		IS	IS	2	2008	78,602
			W		IS	IS			77,290
MO 100 to IS 64	10.260	12.702	E	725	IS	IS	3	2008	84,178
			W		IS	IS			79,379
IS 64 to RT AB	12.702	13.847	E	724	IS	IS	4	2008A	94,920
			W		IS	IS			93,553
RT AB to MO 340	13.847	14.993	E		IS	IS	4	2008	100,940
			W		IS	IS			115,182
MO 340 to MO 364-RT D	14.993	16.810	E	616	IS	IS	5	2008	94,738
			W		IS	IS			87,326
MO 364-RT D to DORSETT RI	16.810	17.937	E		IS	IS	6	2008	82,110
			W		IS	IS			87,471
DORSETT RD to IS 70	17.937	20.315	E	701	IS	IS	6	2008	82,366
			W		IS	IS			88,709

3 Crash Data Analysis Results

3.1 Crash Analysis

In this study, crash data from 2004 through 2007 is used to develop the baseline information. Four years of pre-closure crash data is expected to provide a good base to evaluate and compare to the I-64 construction closure period. For more efficient comparison, all tables and graphs from the tool are grouped into three categories according to the roadway type, i.e.

- a) Type 1: Interstate highways including I-170, I-270, I-44, I-55, I-64 and I-70,
- b) Type 2: Missouri Highways including MO 30, MO 100, MO 115, MO 180, MO 340 and MO 366, and
- c) Type 3: US highways and Expressways including US40, MO141, MO Route-D, US61 and US67.

In order to understand a basic picture about the number of crashes trend changing from 2004 to 2008, all crashes happening from 2004 through 2008 on all roadways are summarized. Table S5 and Figures S1-S3 illustrate the total number of crashes by roadway type. In 2008, compared with the 2007 year crash data, the number of crashes on most of the routes didn't change dramatically. Here, the total crashes on I-64 in 2008 are 488 less than those in 2007 (reduced by 40%). Obviously, this reduction is due to the 5-mile re-construction closure. However, it should also be noticed that total crashes on all Interstate highways also decreased by 575 during the same period, and this overall reduction exceeds the reduction on I-64. This indicates that although I-64 closure caused the traffic to spread to other routes, the total regional crashes on major interstate highways around the closure area still decreased.

Compared to year 2007, the number of crashes on 2008 slightly increased in the routes such as I-70, I-44, I-55 and MO 100 whereas the number decreased in the routes such as I-270, I-170, MO 340, US40 and MO141. Other routes almost stayed at the level same. However, it is interesting to observe (in Table S5) that although each route has its own trend, the overall crashes on all three types of highways decreased in 2008 (i.e., after I-64 re-construction closure) compared to the previous year, 2007. The table also reveals that during the 5-year (2004-2008) period, the overall crashes on both MO and US highways have been continuously decreasing, and furthermore total crashes on all routes investigated have been decreasing since 2004. Considering the increasing traffic, this can be considered as a remarkable result.

Table S5: Total Crashes by year (2004 - 2008)

	Route	2004	2005	2006	2007	2008
Interstate Highway	I-44	1,100	1,061	1,037	1,086	1,126
	I-270	2,103	2,201	2,302	2,287	2,083
	I-64	1,624	1,610	1,494	1,205	717
	I-70	1,907	1,998	2,004	2,072	2,161
	I-170	906	827	904	873	815
	I-55	964	948	963	948	994
	All IS	8,604	8,645	8,704	8,471	7,896
MO Highway	MO366	655	645	652	519	526
	MO30	1,298	1,297	1,049	1,048	941
	MO100	1,179	1,085	1,019	1,086	1,146
	MO115	455	432	382	370	385
	MO180	879	822	721	689	675
	MO340	1,068	935	1,059	1,053	998
	All MO	5,534	5,216	4,882	4,765	4,671
US highway and ExpressWay	MO141	503	566	504	589	503
	RtD	728	682	636	690	699
	US61	853	828	819	791	761
	US67	484	386	396	358	345
	US40	489	536	553	529	344
	All US	3,057	2,998	2,908	2,957	2,652
Overall		17,195	16,859	16,494	16,193	15,219

Another way to represent the trend is to use 'relative' values where the total crashes on the base year is set to be '1' and the crashes in the other years are relative to that value. Table S6 shows 5-year 'relative' crashes for routes investigated. (In the table, the base year is 2004.)

Although Table S6 is a reflection of the previous table, the table shows the trend more clearly. As seen in the table, the overall crashes on both US and MO highways have continuously decreased for the past 5 years (20004-2008) resulting in 14% and 16% less crashes in 2008 (compared to 2004) on US and MO highways respectively. The same information is depicted in Figures S1-S3 by roadway type.

Table S6: Relative Crashes by year (2004 - 2008)

	Route	2004	2005	2006	2007	2008
Interstate Highway	I-44	1.00	0.96	0.94	0.99	1.02
	I-270	1.00	1.05	1.09	1.09	0.99
	I-64	1.00	0.99	0.92	0.74	0.44
	I-70	1.00	1.05	1.05	1.09	1.13
	I-170	1.00	0.91	1.00	0.96	0.90
	I-55	1.00	0.98	1.00	0.98	1.03
	All IS	1.00	1.00	1.01	0.98	0.92
MO Highway	MO366	1.00	0.98	1.00	0.79	0.80
	MO30	1.00	1.00	0.81	0.81	0.72
	MO100	1.00	0.92	0.86	0.92	0.97
	MO115	1.00	0.95	0.84	0.81	0.85
	MO180	1.00	0.94	0.82	0.78	0.77
	MO340	1.00	0.88	0.99	0.99	0.93
	All MO	1.00	0.94	0.88	0.86	0.84
US highway and ExpressWay	MO141	1.00	1.13	1.00	1.17	1.00
	RtD	1.00	0.94	0.87	0.95	0.96
	US61	1.00	0.97	0.96	0.93	0.89
	US67	1.00	0.80	0.82	0.74	0.71
	US40	1.00	1.10	1.13	1.08	0.70
	All US	1.00	0.98	0.95	0.97	0.87
Overall		1.00	0.98	0.96	0.94	0.89

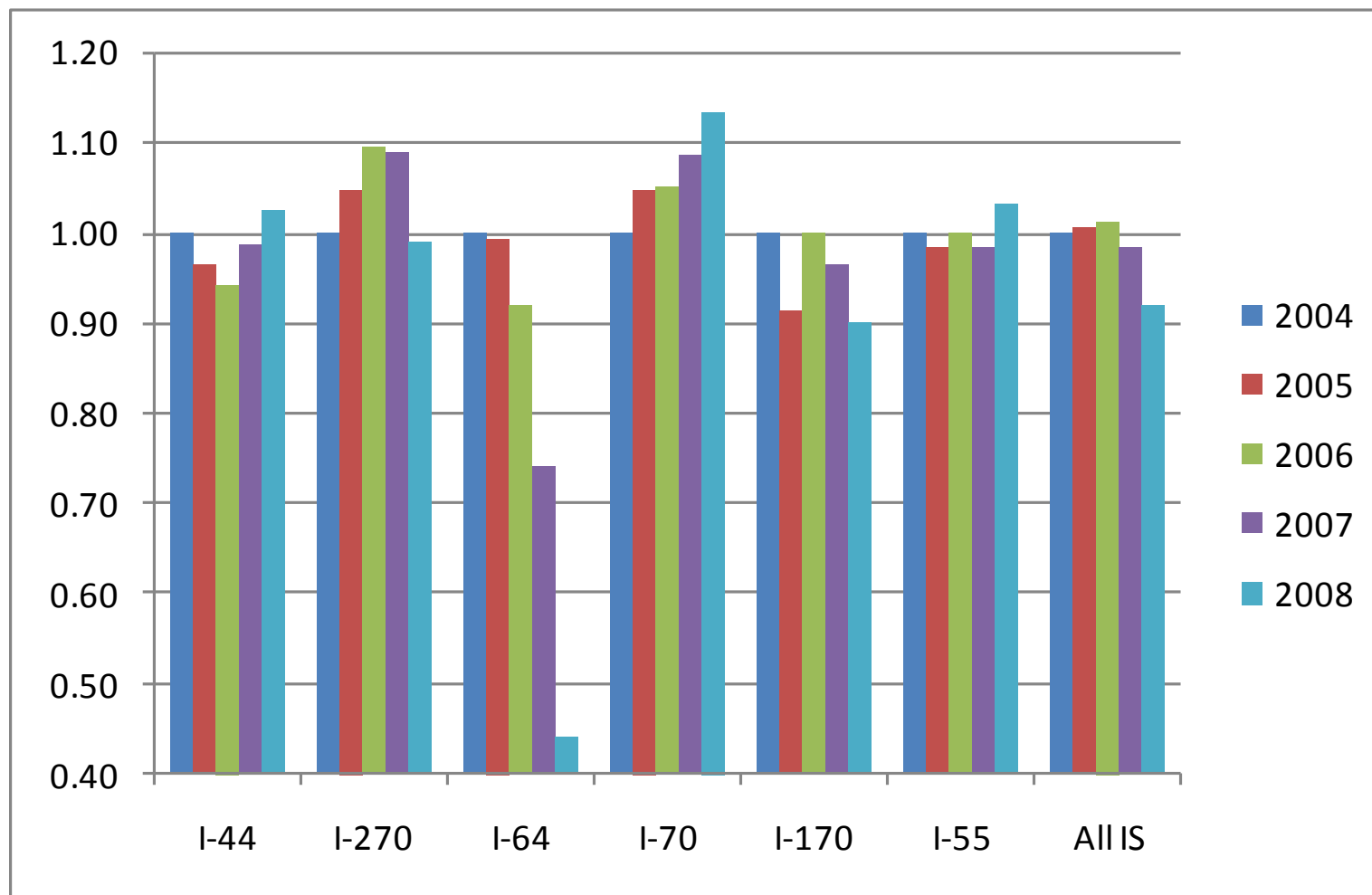


Figure S1: 5-year Crashes, Interstate Highway (2004 through 2008)

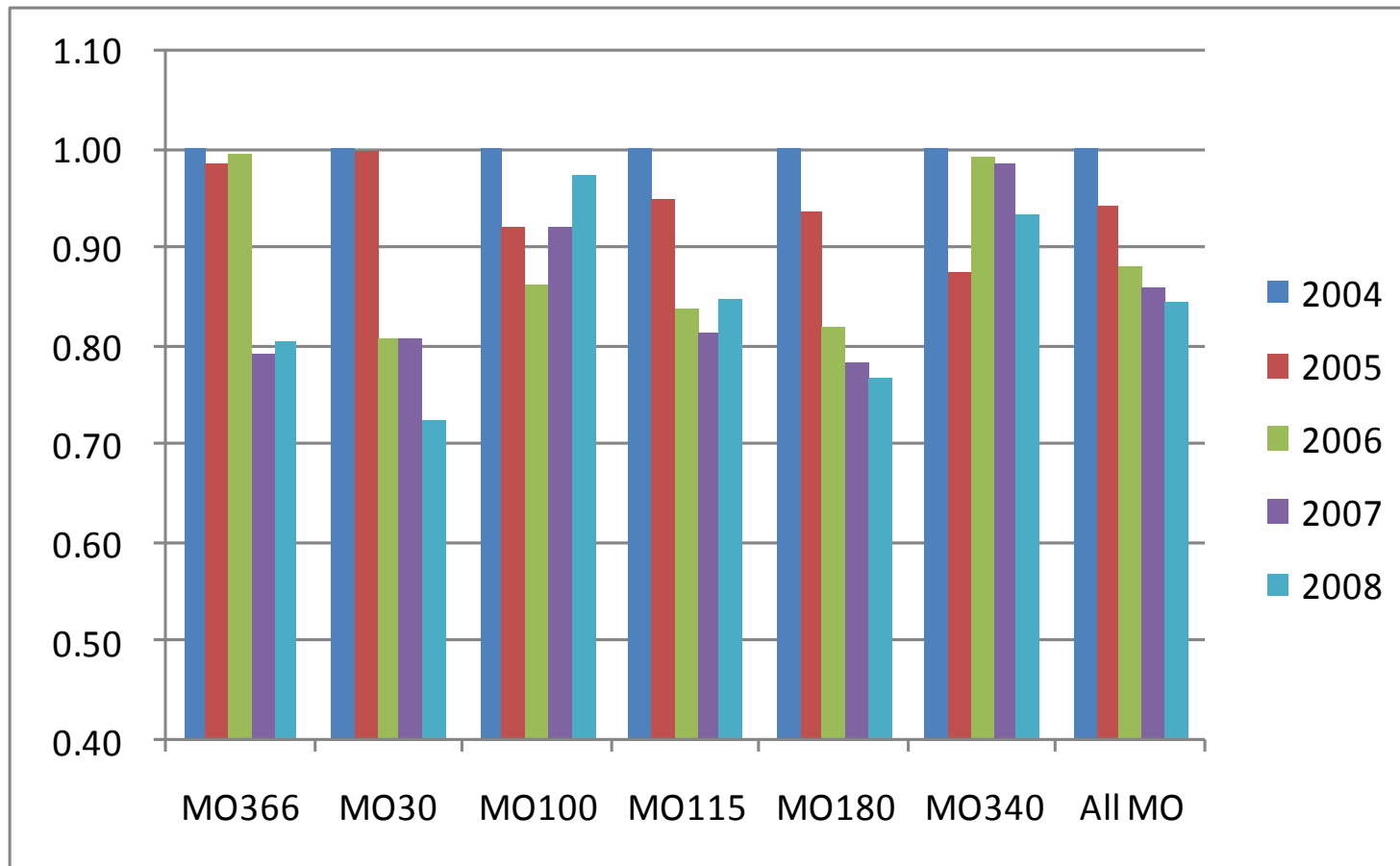


Figure S2: 5-year Crashes, MO Highway (2004 through 2008)

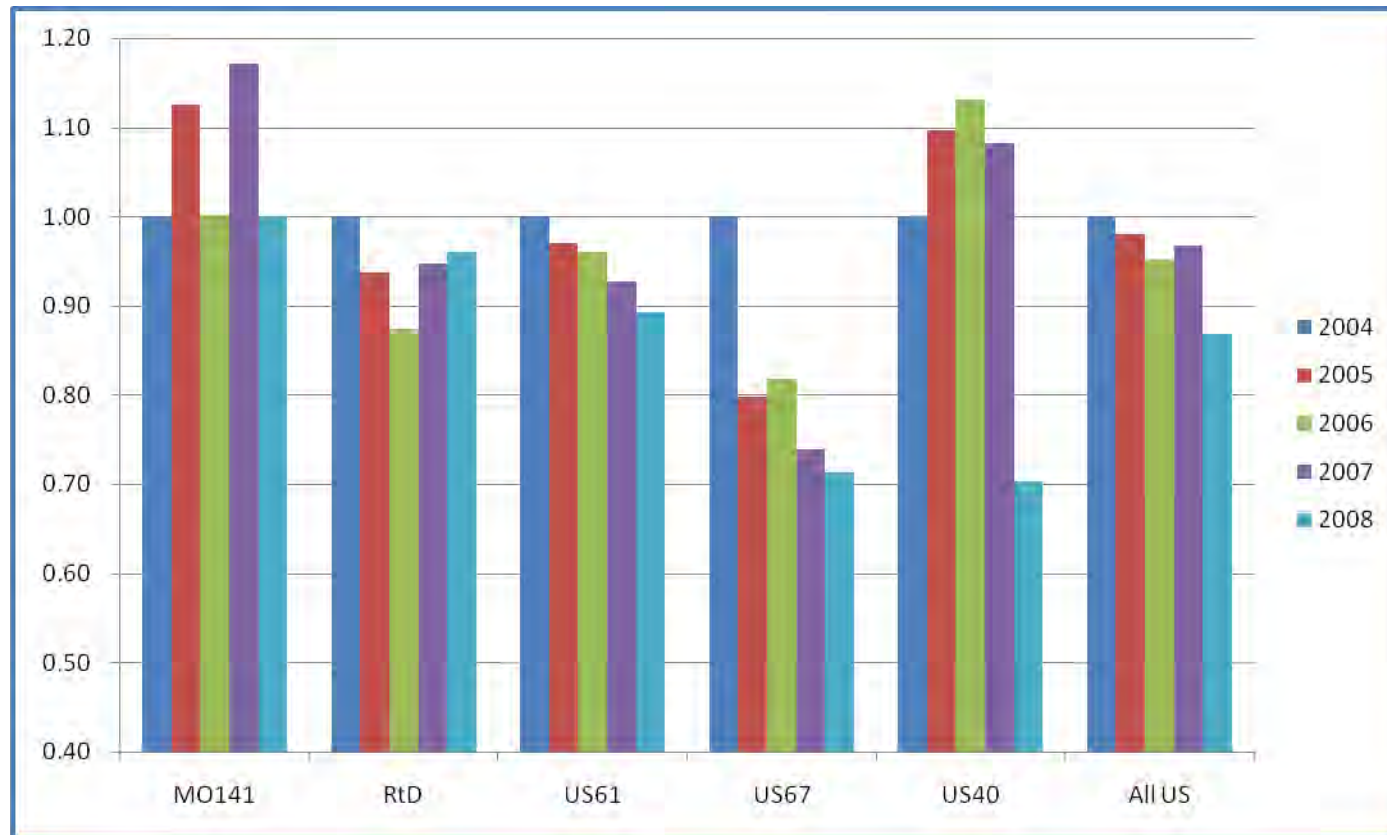


Figure S3: 5-year Crashes, US Routes and Expressways (2004 through 2008)

For more detailed evaluation, various types of figures are prepared and presented in Appendix based on the combination of influencing variables such as direction, crash severity, crash cause, and weather condition. As explained earlier, the research team has developed a computer programming tool that effectively and promptly extracts the crash data at any type of data query requests. The tool is also designed to summarize and report the resulting data in both graph and table formats. We expect the tool can help analysts to save time required for data manipulation and to evaluate results more efficiently.

In order to examine any changes in the crash severity before and after the closure, 30 graphs (= 3 groups of roadways x 2 directions x 5 severity types) are prepared and presented in Figures S16-S30 in the Appendix. After closely inspecting the graphs, the research team has created a summary table (as shown in Table S7) which explains the inspection results in a more systematic way. In the Table, values given in the 'increase' column denote the number of consecutive years during which the increase has been continued. The significance (in the last column in each item) was judged to be 'Yes' if a crash increase is continued for 3 or more years and it exceeds both the 4-year (i.e., 2004-2007) average and the 4-year highest number of crashes.

As seen in Table S7, most critical crash increases are observed in cases where the increasing trend started from 3 or more years ago. The number of crashes on I-70 East bound roadway, for example, has continuously increased for last 4 years (i.e., before the I-64 closure), and in 2008 it exceeded the 4-year highest value. (This observation can be crosschecked in Figures S16 in the Appendix.) Particularly, Property Damage Only (PDO) crashes have increased for 5 consecutive years on the same roadway. This observation suggests us to pay more attention to this route, but also implies that the crash increase after I-64 closure (i.e., in 2008) could be caused by the increasing trend that started from before the I-64 closure.

There are several cases showing 1-year increase where the crashes increase not continuously, but in year 2008 only. As seen in the table, almost all those cases do not exceed the 4-year highest crashes. These cases can be interpreted as either in the middle of increasing pattern or just one occasion where it will be reduced next year. Since those increases are not significantly large (because they are still within the 4-yr highest value range), it is hard to say those increases are due to the I-64 closure. We might have better understating of those cases when more data points are available in one or two years.

Blank cells in the table indicate that compared to 2007, crashes are either reduced or remained at the same level in 2008. Based on the 'total' crashes in the table, only 5 routes show crash increases, and others experienced less or same level of crashes in 2008 compared to the previous year 2007.

Table S8 summarizes the crash data by three major causes that are observed from Figures S31-S36 in the Appendix. It is noteworthy that read-end crashes on MO-100 East bound increase for last 3-year in row exceeding the 4-year highest value. This observation suggests us further engineering investigation on this roadway. This investigation is beyond the high-level investigation as scoped for this study). Similar to the previous case, it is hard to conclude that I-64 closure caused the crash increase in year 2008 since this increasing trend started before the I-64 closure. Other 1-year increase cases are unlikely to be significant in that they are still less the 4-year maximum (in US61-S) or slightly higher than the 4-year maximum (in US340-W).

In order to investigate any monthly variation in the crash data, 12 graphs (=2 directions x 6 highways) prepared and presented in Figures S40-S45 in the Appendix. As summarized in Table S9, no noticeable changes in crash are found before and after I-64 closure. One thing noticeable is that for past 5 consecutive years, December crashes on I-270 Westbound have been continuously increased. This also suggests a further more detailed investigation of crashes along this roadway for the month of December.

It is said that year 2008 was one of the wettest years in St. Louis¹ history. Apparently, weather is an important factor that influences vehicle accidents. In order to analyze the weather effect on the crashes, crashed occurred only on rainy days are collected and analyzed. Figures S46-S40 in Appendix provides the results of the analysis, and findings are summarized in Table S10. As shown in the table, rainy crashes on 8 routes keep increasing for past three years. On I-70-E, particularly, about 200 accidents (out of total 1211 accidents) happened on rainy days in 2008, and the number exceeds the 4-year highest (see Figure S46). From this observation, it can be said that the rainy day crashes significantly contribute to the crash increase on I-70-E. This finding is confirmed by Figure S37 showing the increasing trend of the out-of-control crashes on the same highway for past three years.

Although solid statistical validation is needed, this quick inspection described above leads us to a tentative conclusion that there is no strong evidence proving that I-64 closure contributed to the crash increase on the highways that are potentially influenced by the closure.

¹ For more detail, see http://www.usatoday.com/weather/news/2009-01-01-missouri-precipitation_N.htm.

Table S7: Summary of Crashes by Severity Type (2004 - 2008)

	Route	Direction	Total				PDO				Minor				Disabling				Fatal			
			Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)
Interstate Highway	I-44	E W	3	Y	N	M	3	Y	N	N	1	Y	N	N	1	Y	M	N				
	I-270	E W									1	Y	N	N								
	I-70	E W	1	Y	Y	M	5	Y	Y	Y	1	Y	N	N	4	Y	Y	Y	3	Y	Y	Y
	I-170	E W									1	N	N	N					1	Y	M	N
	I-55	S N																	1	Y	Y	M
MO Highway	MO366	E W					1	N	N	N												
	MO30	E W													1	N	N	N				
	MO100	E W	3	Y	N	N	3	Y	Y	M	1	Y	N	N								
	MO115	S N	1	Y	N	N	1	N	N	N	1	Y	Y	N	1	Y	M	N				
	MO141	S N																				
	MO180	E W																				
	MO340	E W					1	M	N	N	3	Y	Y	N	3	Y	Y	Y				
US Highway	RtD	E W	3	Y	Y	M	3	Y	Y	M					1	Y	N	N	1	Y	Y	N
	US61	S N													1	N	N	N				
	US67	S N									3	M	Y	N	1	Y	N	N				
	US40	E W																				

Y: Yes

M: Maybe

N: No

Table S8: Summary of Crashes by Major Three Causes (2004 - 2008)

	Route	Direction	Rea-End				Passing				Out-fo-Control			
			Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)
Interstate Highway	I-44	E W	3	Y	N	N					3	Y	N	N
	I-270	E W									3	Y	N	N
	I-70	E W									3	Y	Y	Y
	I-170	E W									3	Y	Y	Y
	I-55	S N	3	Y	Y	N					3	Y	Y	M
MO Highway	MO366	E W												
	MO30	E W									3	Y	N	M
	MO100	E W	3	Y	Y	Y								
	MO115	S N					1	M	N	N	1	Y	N	N
	MO141	S N												
	MO180	E W												
	MO340	E W	1	Y	Y	N								
US Highway	RtD	E W					1	Y	N	N	3	Y	N	M
	US61	S N	1	Y	N	N	1	Y	N	N				
	US67	S N									3	Y	Y	Y
	US40	E W												

Y: Yes

M: Maybe

N: No

Table S9: Summary of Crashes by Month (2004 - 2008)

	Route	Direction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)	Increase Exceeding 4-yr average? Exceeding 4-yr high? Significant? (Judgement)
Interstate Highway	I-44	E W												
	I-270	E W												3 Y Y Y 5 Y Y Y
	I-70	E W					4 Y Y Y							
	I-170	E W												
	I-55	S N												
MO Highway	MO366	E W	HAVE NOT CHECKED											
	MO30	E W												
	MO100	E W												
	MO115	S N												
	MO141	S N												
	MO180	E W												
	MO340	E W												
US Highway	RtD	E W												
	US61	S N												
	US67	S N												
	US40	E W												

Y: Yes M: Maybe N: No

Table S10: Summary of Weather Type (2004 - 2008)

	Route	Direction	Rainy Day				Snow Day			
			Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)	Increase	Exceeding 4-yr average?	Exceeding 4-yr high?	Significant? (Judgement)
Interstate Highway	I-44	E W	3	Y	N	N	Haven't Checked			
	I-270	E W	3	Y	N	N				
	I-70	E W	3	Y	Y	Y				
	I-170	E W	3	Y	N	N				
	I-55	S N	3	Y	Y	Y				
MO Highway	MO366	E W								
	MO30	E W								
	MO100	E W	3	Y	N	N				
	MO115	S N								
	MO141	S N								
	MO180	E W	3	Y	N	N				
	MO340	E W								
US Highway	RtD	E W	3	Y	N	N				
	US61	S N	1	Y	N	N				
	US67	S N								
	US40	E W								
Y: Yes			M:Maybe			N: No				

3.2 Crash Rate Analysis

The crash rate represents the intensity of crashes relative to total vehicle miles traveled. For example, if roadway A shows a higher crash rate than roadway B, it indicates that roadway A is more vulnerable to crashes than roadway B in case the traffic volume and the roadway lengths of both roadways are same (i.e., under the same condition.) Unlike the crash rate that treats all severity types equally, the severity rate assigns higher weights to fatality and injury than property damage only crash. Due to the different weights, the severity rate provides more explanation of the characteristics of the crashes than the crash rate. For a given segment of a roadway, crash rate (CR) and severity rate (SR) are given by:

$$CR = \frac{100,000,000 \times \text{Crash}}{AADT \times \text{Length} \times \text{Days}} \quad (1)$$

$$SR = \frac{100,000,000 \times [10(\text{FAT}) + 4(\text{INJ}) + N]}{AADT \times \text{Length} \times \text{Days}} \quad (2)$$

Where, CRASH = Number of crashes for the section, Days = Number of days for the study, AADT = Annual Average Daily Traffic, Length = Length of Section, FAT = Number of fatal crashes, INJ = Number of injury crashes, N = Number of property damage only crashes.

Similarly, overall crash rate (OCR) and overall severity rate (OSR) for a given route are calculated by following equations:

$$OCR = \frac{100,000,000 \times \text{Crash}}{\text{weighted AADT} \times \text{Length} \times \text{Days}} \quad (3)$$

$$OSR = \frac{100,000,000 \times [10(\text{FAT}) + 4(\text{INJ}) + N]}{\text{weighted AADT} \times \text{Length} \times \text{Days}} \quad (4)$$

Where, Length = Length of the route,

$$\text{weighted AADT} = \frac{\sum_{\text{all segments}} AADT_i \times \text{Length}_i}{\sum_{\text{all segments}} \text{Length}_i}.$$

As explained, crash rate calculation requires not only the number of crashes but also traffic volumes (in vehicles per day), length of the roadway (in miles) and period being evaluated (in days). MoDOT provided the team with AADT information for the highways, and Table S11 summarizes the segment of highways AADT of which are used in this study.

Table S11: Highway Segments where AADT Data are acquired

		Starting Pt	Ending pt	miles
Interstate Highway	I-44	Antire Rd	Jefferson Ave	18.31
	I-270	I-55	US67	23.46
	I-70	LP 70	Walnut	21.18
	I-170	I-270	Galleria Pkwy	11.13
	I55	Il State Line	MERAMEC BOTTOM RD	17.00
MO Highway	MO366	I44	Grand-Nos	18.86
	MO30	JEFFERSON CO LINE	CITY LIMIT	15.70
	MO100	Baxter Rd	6th St	18.43
	MO115	I70	I70 E JCT	10.25
	MO180	ST CHARLES ROCK RD	KINGSHIGHWAY	13.92
	MO340	LADUE RD	PENNSYLVANIA	11.30
US highway and ExpressWay	MO141	MO340	I55	21.40
	RtD	IS 270	Skinker Parkway	15.23
	US40	MISSOURI RESEARCH PARK	STADIUM	12.57
	US67	MO 94	BAUMGARTNER RD	12.00
	US61	MISSOURI RESEARCH PARK	BAUMGARTNER RD	6.00

The team also developed an analytical tool that calculates the CR, SR, OCR and OSR in an automatic way. The tool is designed to be able to calculate CR and SR not only by original segments of a given roadway (defined by MoDOT) but also by any segment length (defined by users). Tables S18-S32 listed in Appendix present CR, SR, OCR and SCR calculated for the roadways investigated based on the 1-mile section length.

Annual Average Daily Traffic (AADT)

5-year AADT are summarized in Table S12, and Figures S4 and S5. Observations made from the table are as follow:

- 1) I-270 is the busiest route, but interestingly AADT in 2008 slightly dropped from the previous year;
- 2) Similar to I-270, traffics on all MO highways decreased in 2008 from the previous year,
- 3) Similar to MO highways, traffics on all US highways decreased in 2008 from the previous year,
- 4) Unlike the other routes, I-44 traffic has constantly increased for the past 5 year and the increase in year 2008 is quite significant, and
- 5) MO100E, MO141S, and MO180E showed exactly same AADTs in 2006 and 2007

Figures S4 and S5 provide graphical representations of the Table S12. For better picture of the historical trend in AADT, the 'relative' AADT values corresponding to Table S12 are also presented in Table S13 (also in Figures S6 and S7).

Note: To maintain consistency in this report, we are using AADT provided through MoDOT. We understand from work completed in the Mobility section of this report that traffic volumes increased on most of routes during 2008. This increase was associated with these routes being alternative routes during the I-64 closure. In a future report, we will show crash rates using both MoDOT's AADT and actual Interstate AADT collected from roadside detection devices.

Table S12: AADT (unit: vehicles/day)

		2004	2005	2006	2007	2008
Interstate Highway	I-44 E	49,973	50,325	53,637	53,610	55,011
	I-270 E	80,564	80,662	82,115	82,937	82,116
	I-64 E	63,787	63,742	66,777	66,632	65,759
	I-70 E	64,044	64,379	61,448	62,105	62,142
	I-170 E	51,202	51,261	51,061	51,572	51,252
	I-55 S	51,686	51,746	54,939	55,489	55,145
	I-44 W	53,581	53,726	52,332	52,890	54,667
	I-270 W	79,402	79,499	81,534	82,350	81,474
	I-64 W	67,448	67,256	65,627	64,463	62,273
	I-70 W	62,494	63,068	60,598	61,229	61,703
	I-170 W	51,753	51,812	52,758	53,286	52,956
	I-55 N	50,069	50,127	54,204	54,746	54,407
	I-44	103,554	104,050	105,969	106,500	109,679
	I-270	159,966	160,161	163,650	165,286	163,590
	I-64	131,235	130,998	132,404	131,095	128,032
	I-70	126,538	127,447	122,046	123,334	123,846
	I-170	102,955	103,073	103,820	104,858	104,208
	I-55	101,755	101,872	109,144	110,235	109,552
MO Highway	MO366	41,603	40,727	40,070	40,368	39,104
	MO30	39,837	39,207	39,599	39,358	38,129
	MO100	38,928	38,107	37,511	37,511	36,607
	MO115	27,594	27,737	23,173	22,942	22,388
	MO180	43,558	42,639	37,163	37,163	36,268
	MO340	50,179	48,258	39,492	39,498	39,782
US highway and Expressway	MO141	35,759	35,003	35,672	35,672	34,946
	RtD	51,585	50,912	50,639	50,432	49,302
	US40	106,765	106,550	105,118	104,120	102,156
	US67	34,834	34,096	30,392	30,392	29,391
	US61	43,273	42,427	46,873	43,455	42,463

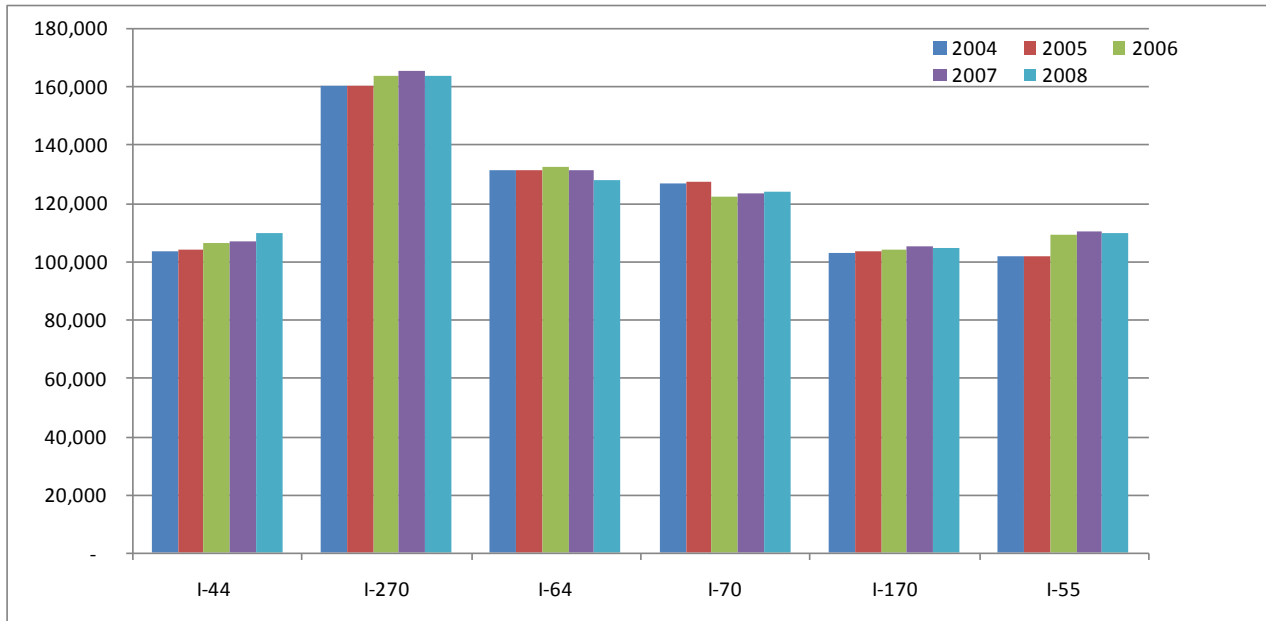


Figure S4: AADT, Interstate Highway (Both Directions, unit: vehicles/day)

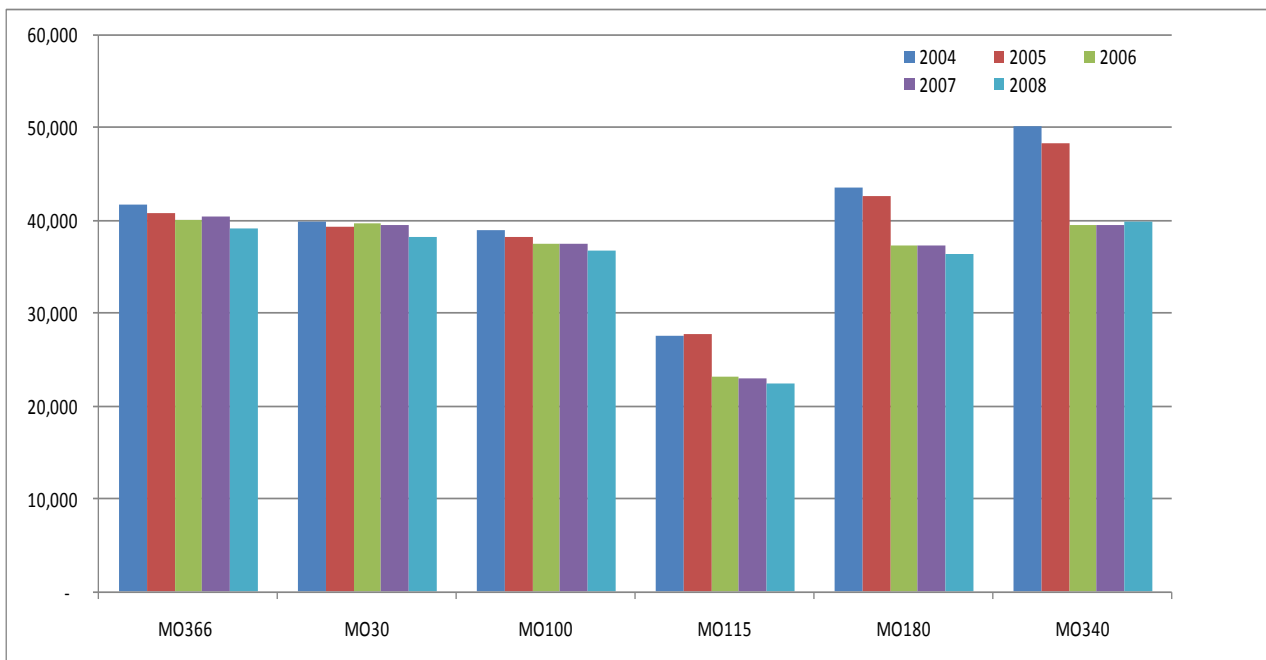


Figure S5: AADT, MO Highway (Both Directions, unit: vehicles/day)

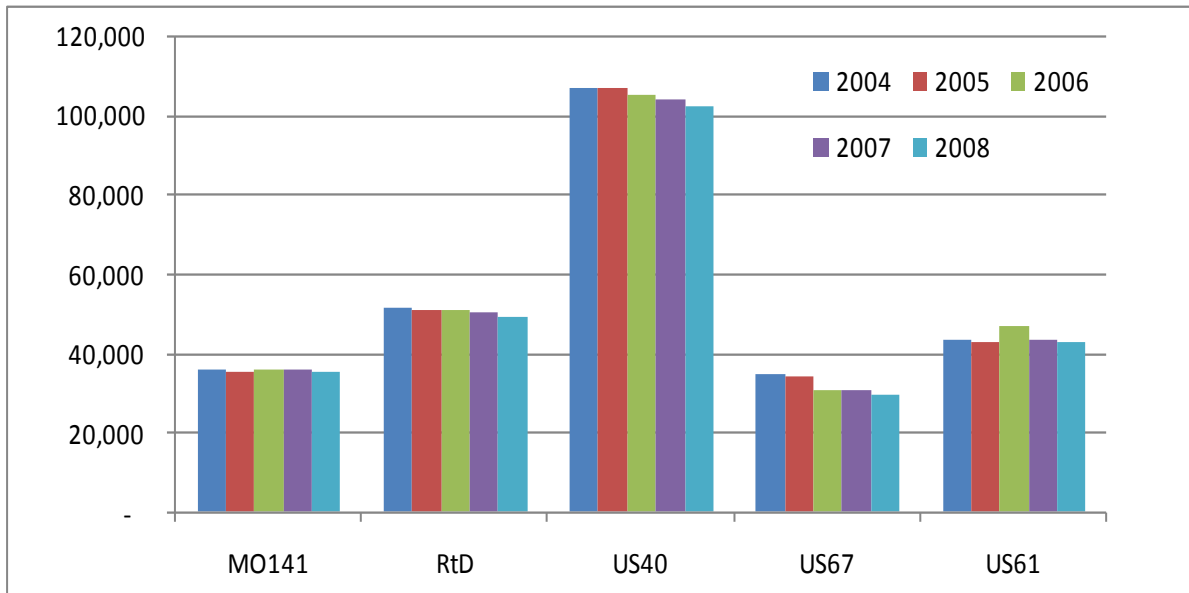


Figure S6: AADT, US Routes and Expressway (Both Directions, unit: vehicles/day)

Table S13: Relative AADT (unit: vehicles/day)

		2004	2005	2006	2007	2008
Interstate Highway	I-44 E	1.00	1.01	1.07	1.07	1.10
	I-270 E	1.00	1.00	1.02	1.03	1.02
	I-64 E	1.00	1.00	1.05	1.04	1.03
	I-70 E	1.00	1.01	0.96	0.97	0.97
	I-170 E	1.00	1.00	1.00	1.01	1.00
	I-55 S	1.00	1.00	1.06	1.07	1.07
	I-44 W	1.00	1.00	0.98	0.99	1.02
	I-270 W	1.00	1.00	1.03	1.04	1.03
	I-64 W	1.00	1.00	0.97	0.96	0.92
	I-70 W	1.00	1.01	0.97	0.98	0.99
	I-170 W	1.00	1.00	1.02	1.03	1.02
	I-55 N	1.00	1.00	1.08	1.09	1.09
	I-44	1.00	1.00	1.02	1.03	1.06
	I-270	1.00	1.00	1.02	1.03	1.02
	I-64	1.00	1.00	1.01	1.00	0.98
	I-70	1.00	1.01	0.96	0.97	0.98
	I-170	1.00	1.00	1.01	1.02	1.01
	I-55	1.00	1.00	1.07	1.08	1.08
MO Highway	MO366	1.00	0.98	0.96	0.97	0.94
	MO30	1.00	0.98	0.99	0.99	0.96
	MO100	1.00	0.98	0.96	0.96	0.94
	MO115	1.00	1.01	0.84	0.83	0.81
	MO180	1.00	0.98	0.85	0.85	0.83
	MO340	1.00	0.96	0.79	0.79	0.79
US highway and Expressway	MO141	1.00	0.98	1.00	1.00	0.98
	RtD	1.00	0.99	0.98	0.98	0.96
	US40	1.00	1.00	0.98	0.98	0.96
	US67	1.00	0.98	0.87	0.87	0.84
	US61	1.00	0.98	1.08	1.00	0.98

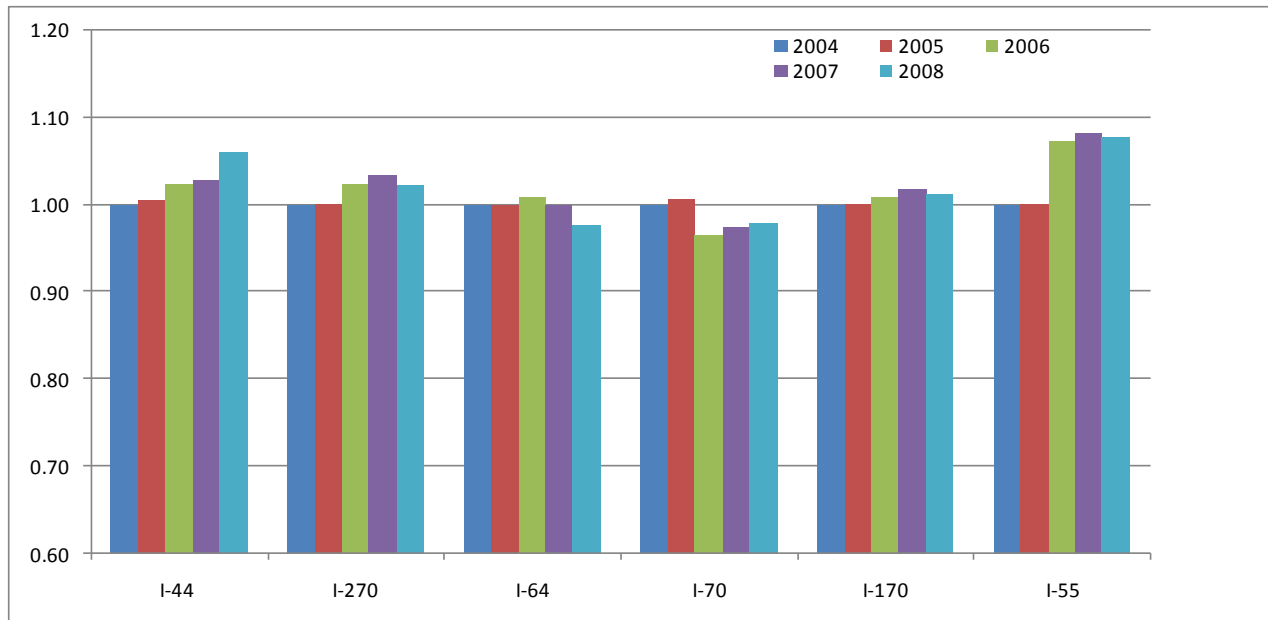


Figure S7: Relative AADT, Interstate Highway (Both Directions, unit: vehicles/day)

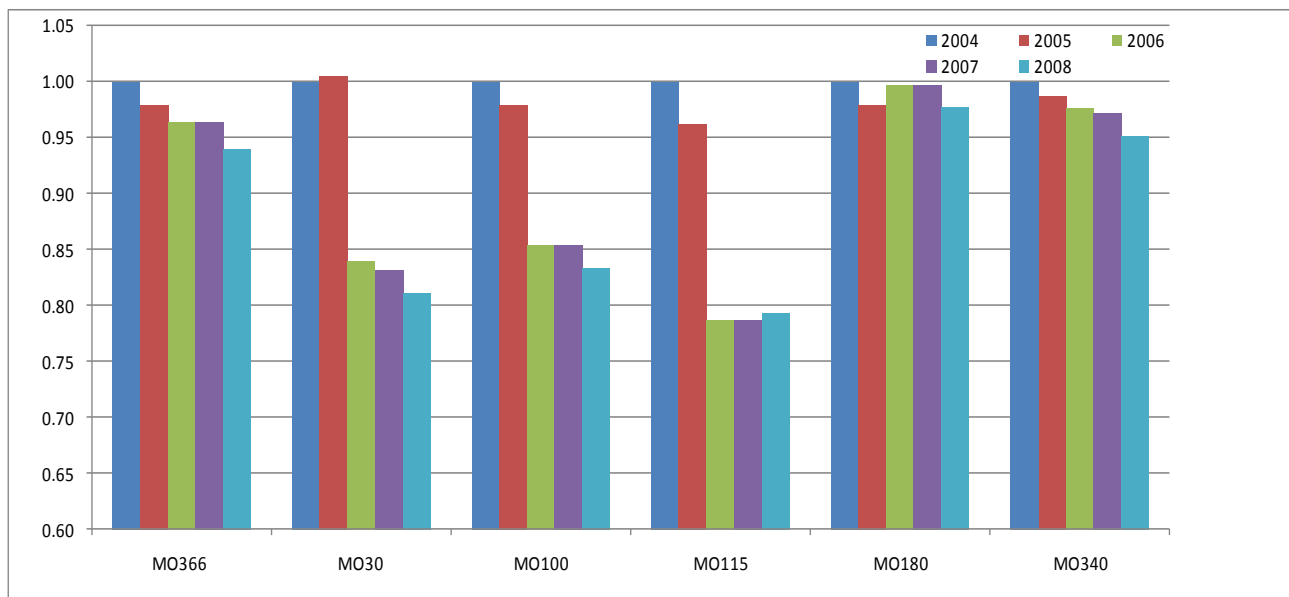


Figure S8: Relative AADT, MO Highway (Both Directions, unit: vehicles/day)

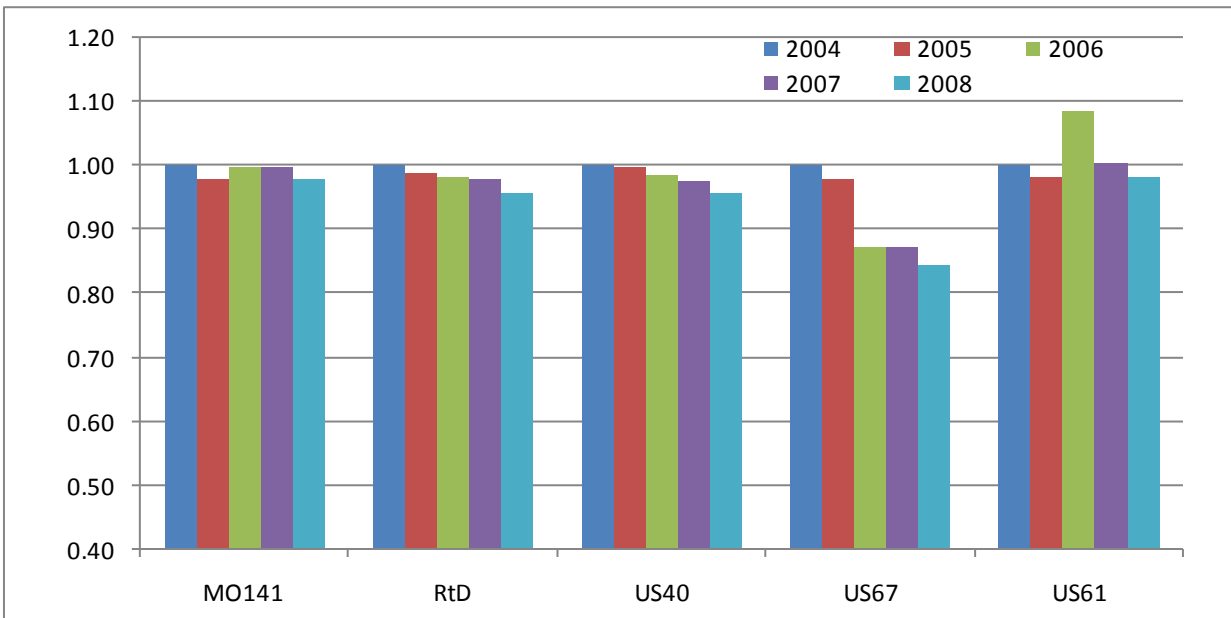


Figure S9: Relative AADT, US Highway and Expressway (Both Directions, unit: vehicles/day)

5-year crash rates (2004-2008)

Crash rates over the past 5 years (2004-2008) are presented in Table S14 (also in Figures S10, S11 and S12), and the corresponding 'relative' crash rates are provided in Table S15 (also in Figures S13, S14 and S15)².

Table S14 clearly shows that crashes on local routes are significantly higher than those on interstate highways. This is an obvious result because drivers on local routes are exposed to much more conflicts caused by frequent access roads and traffic control devices such as traffic signals, stop signs, etc. than those on the interstate highway. MO highways show unbalanced crash rates by direction. Particularly, the Route 115 corridor appears to be more vulnerable to crashes than other routes. It is also shown that compared to Year 2007, crash rates on most routes either decrease or remain same except I-70 E and I-55 S in 2008.

Another fact to be noted is that the crash rates on I-70 and MO100 keep increasing for past 3-5 years and they exceeded the 4-year (2004-2007) highest value. Again, this observation urges us to conduct further investigation on how and why these increases happen, but one reason for the increase on I-70 E was partially explained in the previous section (i.e., rainy day crashes.) It is also observed that the increasing trend of the two interstate highways started before the I-64 closure (i.e., before 2008). So, it is hard to decide whether the crash rate increases are caused by the I-64 closure or by other factors. The crash rate for MO115 also increases in 2008, but considering the up-and-down patterns shown in the past 4 years, it is also hard to determine whether it is due to local effect or due to the I-64 closure.

It should be also remarked that although the total crashes on I-44 increased in 2008 compared to 2007 (See Table S5), the crash rate on the highway slightly drops in 2008 (See Figure S8). From the traffic safety viewpoint, this indicates that the safety on I-44 was improved in year 2008 compared to the year 2007, which is a contradicting conclusion that could be reached at if only the number of crashes is used.

Table S15 (along with Figures S13 and S14 and S15) illustrates 5-year 'relative' crash rates for routes investigated. (In the graph, year 2004 is the base year.) Although, trends observed in this table (and Figures) are very parallel to those in 5-year crash rates in Table S14 (and Figures S8 and S9), it is more clear to see the growth rate by percentage. Compared to year 2004, for example, crashes on I-70 increases by more than 20% whereas crashes on other interstate highways slightly decrease (in I-44, I-270, I-55) or considerably decrease (in I-170).

² It should be noted that due to the different logging systems used in AADT and crash data records, the crash and injury rate analyses in this study is for one-way. (For more details, see section 2-2)

It is generally observed that in most of the routes, the crash rates decreases in 2008 compared to 2007 except several routes (such as I-44, I-70, MO-366, MO-100, MO-115, Route-D) showing slightly increased crash rates. Nonetheless, those increased crash rates (except I-70) are still below either the 4-year (2004-2007) average crash rate or the 4-year highest rate. It is noteworthy the crash rate in I-70 has been continuously increased since year 2004. Apparently, this increasing trend in I-70 started even before the I-64 closure. One more to be noted is that among all these routes, the south direction of US 61 highway shows unreasonably high crash rates ranged from 1500 to 1700. After closely examining the raw crash data, the team found out that highly concentrated crashes are recorded in a segment of the highway (around the continuous log of 170).

From this observation, we can tentatively conclude that no observational evidence is found to prove the fact that I-64 closure influences increases in crashes in the highways around the closure. (We use 'tentatively' in the statement since the statistical analysis should be applied to confirm the statement. The analysis will be carried out when more data points are available.)

Table S14: Overview of All Crash Rate (2004 through 2008)

		2004	2005	2006	2007	2008
Interstate Highway	I-44 E	163	170	154	164	160
	I-270 E	184	181	196	192	181
	I-64 E	233	237	205	172	129
	I-70 E	204	220	237	234	252
	I-170 E	292	250	253	241	240
	I-55 S	164	157	141	139	162
	I-44 W	161	145	145	147	154
	I-270 W	123	140	133	132	130
	I-64 W	220	216	209	165	108
	I-70 W	188	190	192	203	200
	I-170 W	143	148	178	171	146
	I-55 N	142	145	146	139	131
	I-44	162	157	150	156	157
	I-270	154	161	165	162	155
	I-64	226	226	207	169	119
	I-70	196	205	215	218	226
	I-170	217	199	215	206	193
	I-55	153	151	143	139	147
MO Highway	MO366	392	396	406	321	335
	MO30	568	579	465	466	427
	MO100	553	521	498	530	572
	MO115	645	611	647	633	673
	MO180	461	441	444	424	425
	MO340	516	471	465	462	433
US highway and Expressway	MO141	350	404	353	412	359
	RtD	407	388	364	396	409
	US40	100	110	120	116	77
	US67	346	290	325	294	268
	US61	900	894	800	833	818

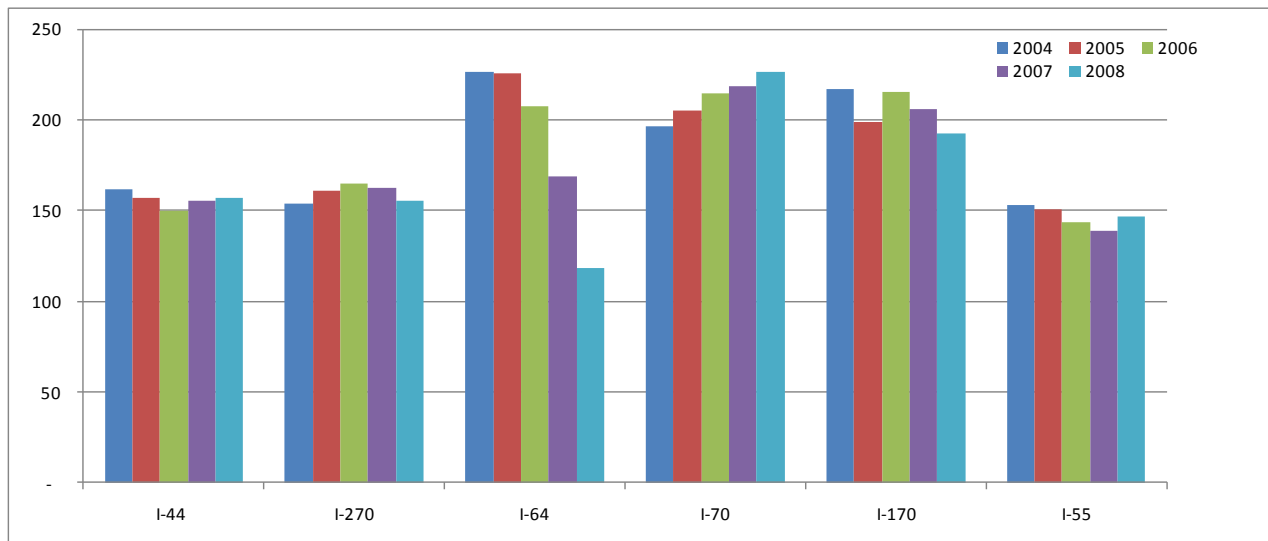


Figure S10: All Crash Rate, Interstate Highway (Both Directions, 2004 through 2008)

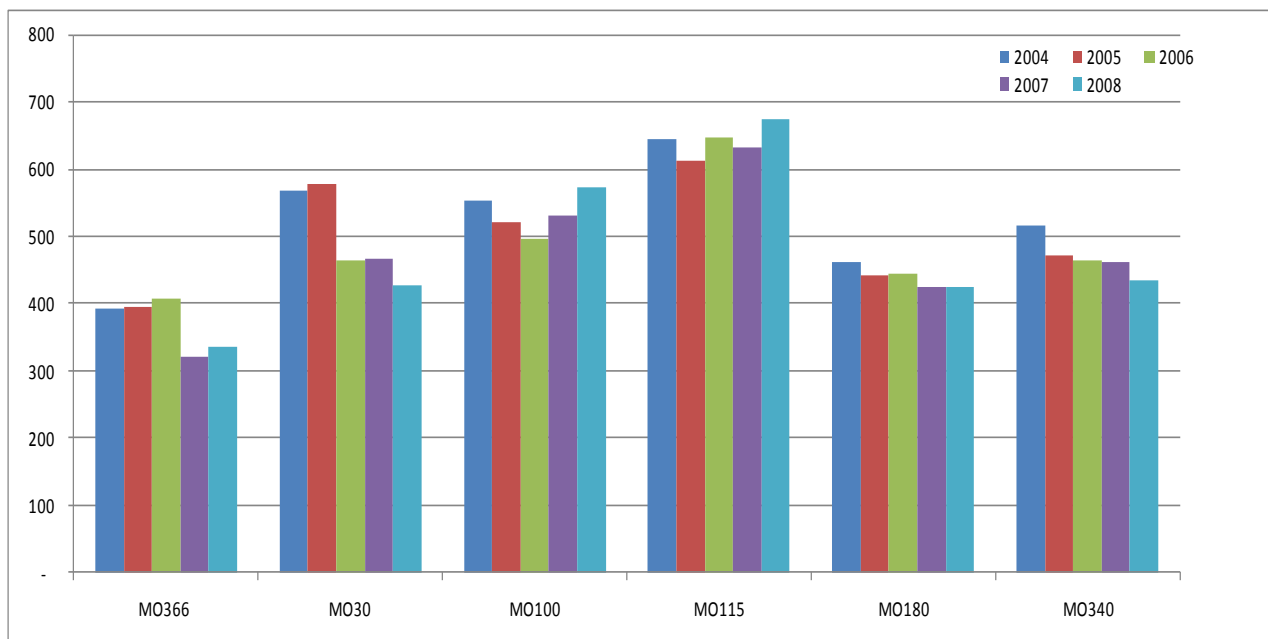


Figure S11: All Crash Rate, MO Highway (Both Directions, 2004 through 2008)

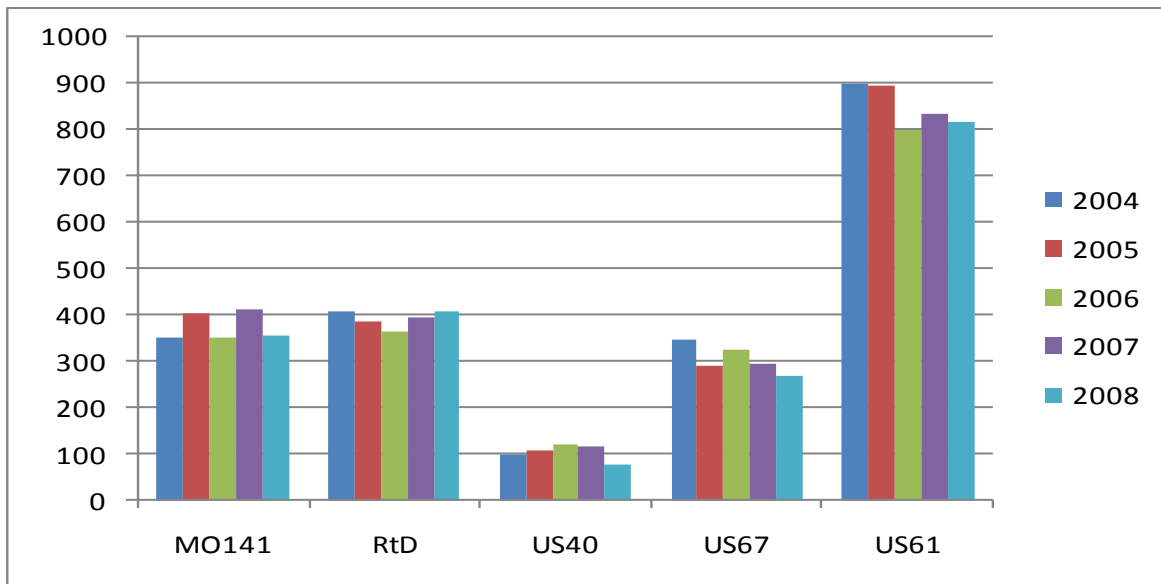


Figure S12: All Crash Rate, US Highway and Expressway (Both Directions, 2004 through 2008)

Table S15: 5-year Relative All Crash Rate (Base year: 2004)

		2004	2005	2006	2007	2008
Interstate Highway	I-44 E	1.00	1.04	0.94	1.01	0.98
	I-270 E	1.00	0.98	1.07	1.04	0.98
	I-64 E	1.00	1.02	0.88	0.74	0.55
	I-70 E	1.00	1.08	1.16	1.15	1.24
	I-170 E	1.00	0.86	0.87	0.83	0.82
	I-55 S	1.00	0.96	0.86	0.85	0.99
	I-44 W	1.00	0.90	0.90	0.92	0.96
	I-270 W	1.00	1.14	1.08	1.07	1.06
	I-64 W	1.00	0.98	0.95	0.75	0.49
	I-70 W	1.00	1.01	1.02	1.08	1.07
	I-170 W	1.00	1.03	1.25	1.20	1.02
	I-55 N	1.00	1.02	1.02	0.98	0.92
	I-44	1.00	0.97	0.92	0.96	0.97
	I-270	1.00	1.05	1.07	1.06	1.01
	I-64	1.00	1.00	0.92	0.75	0.52
	I-70	1.00	1.05	1.09	1.11	1.15
	I-170	1.00	0.92	0.99	0.95	0.89
	I-55	1.00	0.98	0.93	0.91	0.96
MO Highway	MO366	1.00	1.01	1.04	0.82	0.85
	MO30	1.00	1.02	0.82	0.82	0.75
	MO100	1.00	0.94	0.90	0.96	1.03
	MO115	1.00	0.95	1.00	0.98	1.04
	MO180	1.00	0.96	0.96	0.92	0.92
	MO340	1.00	0.91	0.90	0.89	0.84
US highway and Expressway	MO141	1.00	1.15	1.01	1.18	1.02
	RtD	1.00	0.95	0.89	0.97	1.00
	US40	1.00	1.10	1.20	1.16	0.77
	US67	1.00	0.84	0.94	0.85	0.77
	US61	1.00	0.99	0.89	0.93	0.91

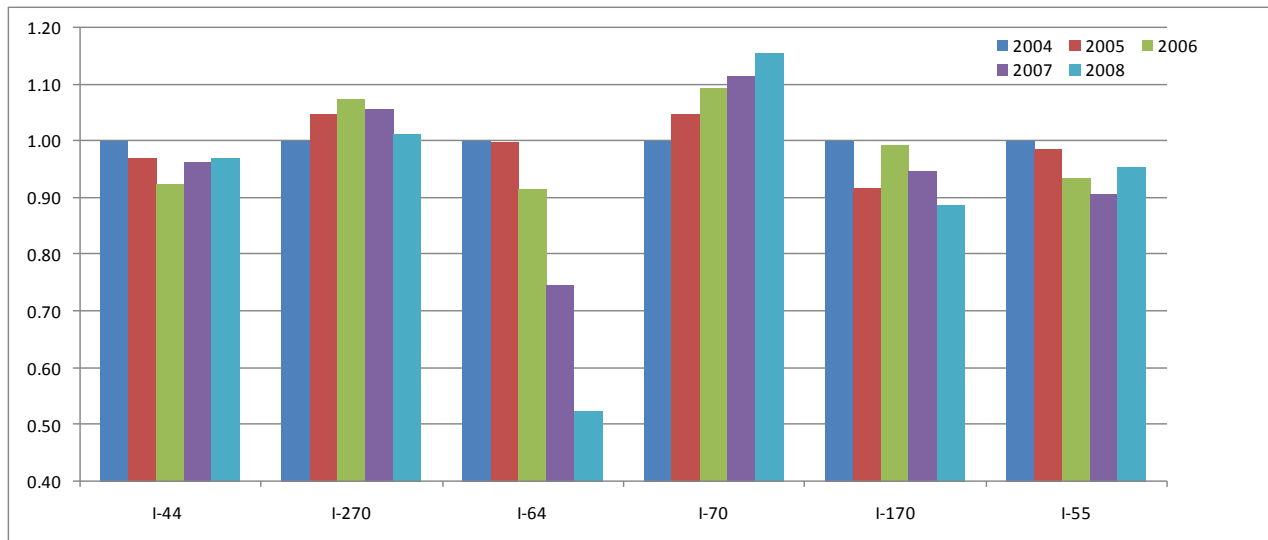


Figure S13: Relative All Crash Rate, Interstate Highway (Both Directions, Base year: 2004)

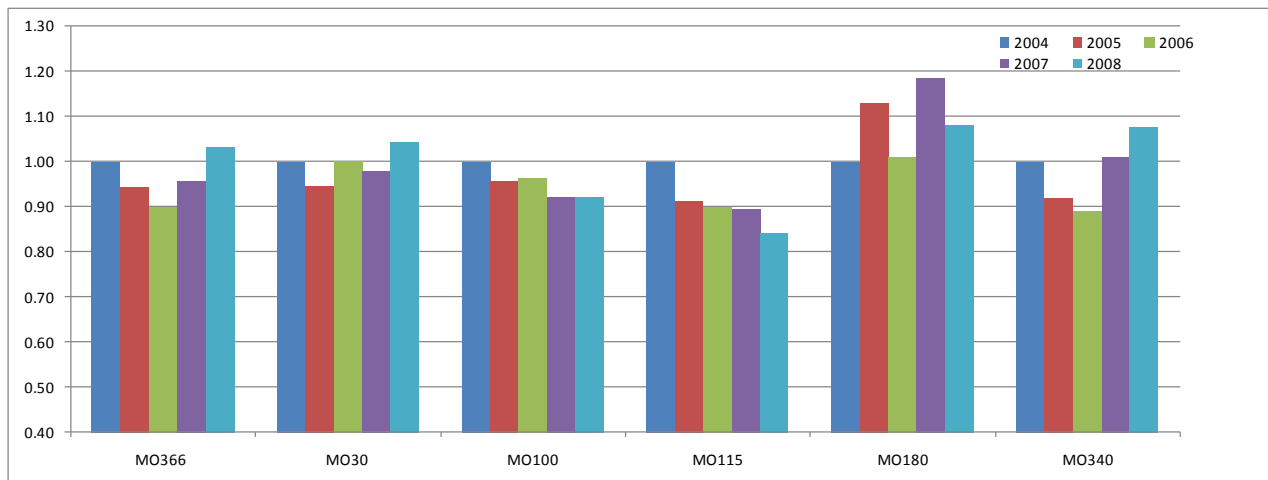


Figure S14: Relative All Crash Rate, MO Highway (Both Directions, Base year: 2004)

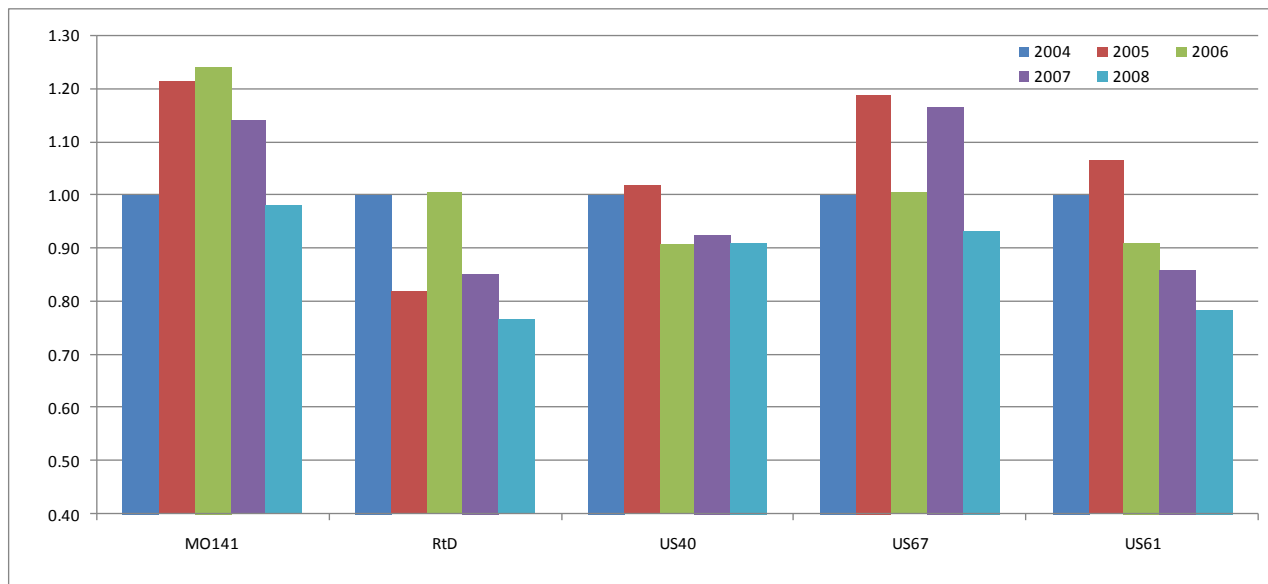


Figure S15: Relative All Crash Rate, US Highway and Expressway (Both Directions, Base year: 2004)

Appendix 1: Crashes (2004-2008)

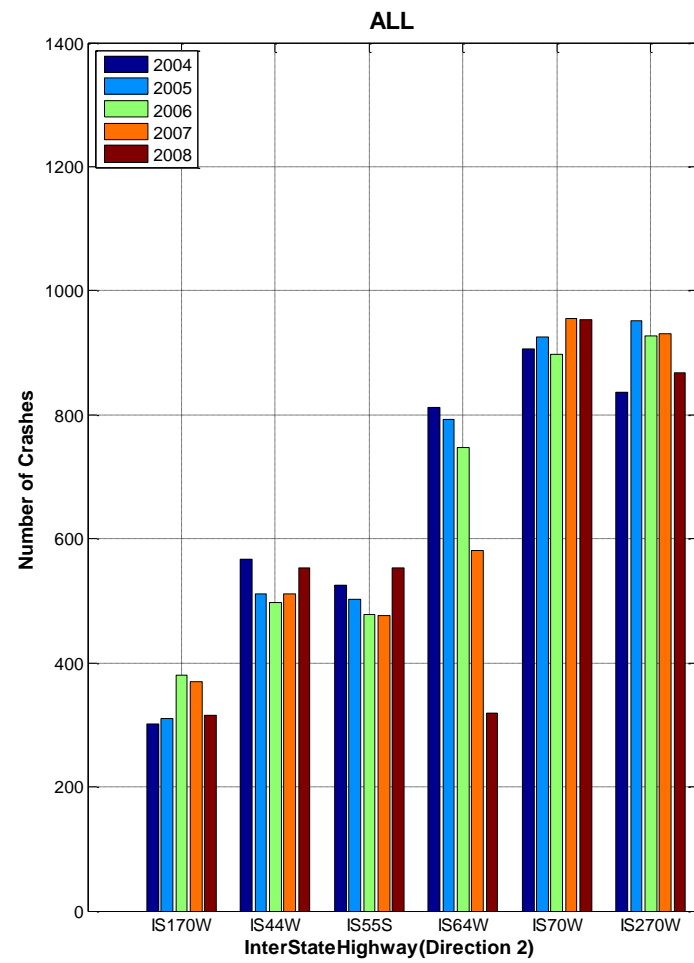
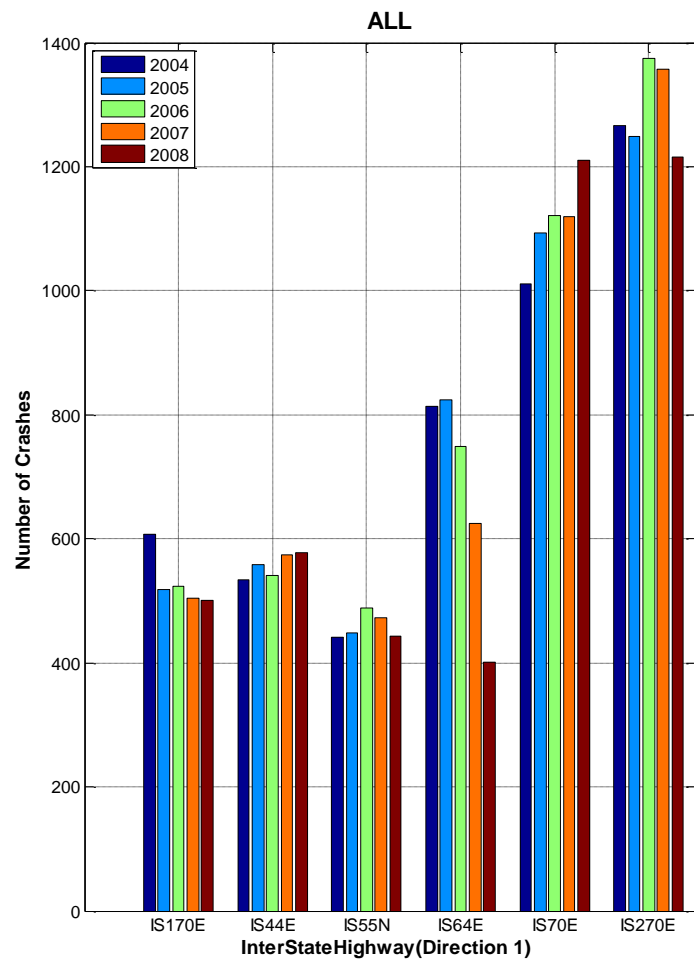


Figure S16 : All Crashes on Interstate Highway (Both directions, 2004-2008)

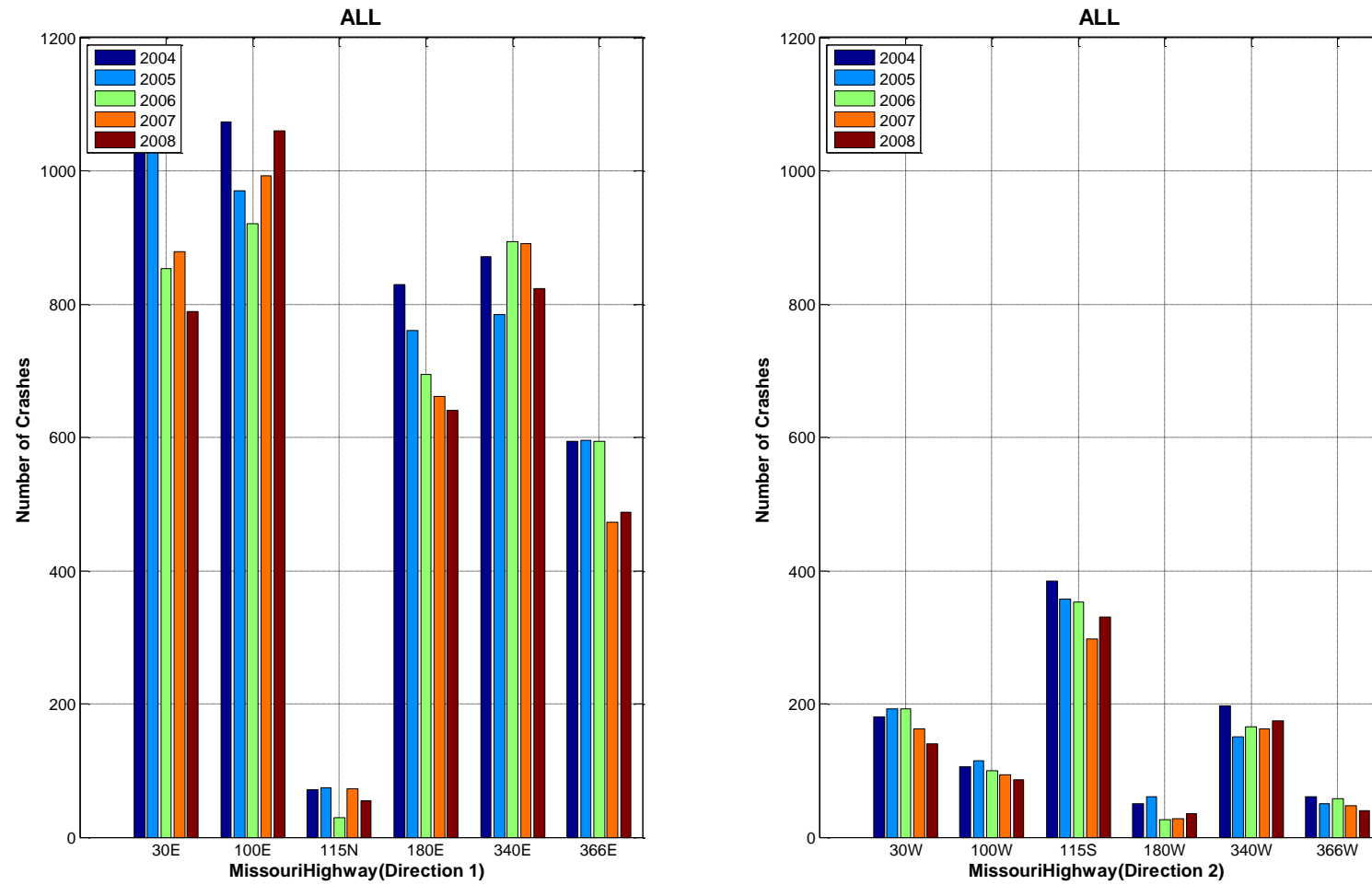


Figure S17: All Crashes on MO Highway (Both directions, 2004-2008)

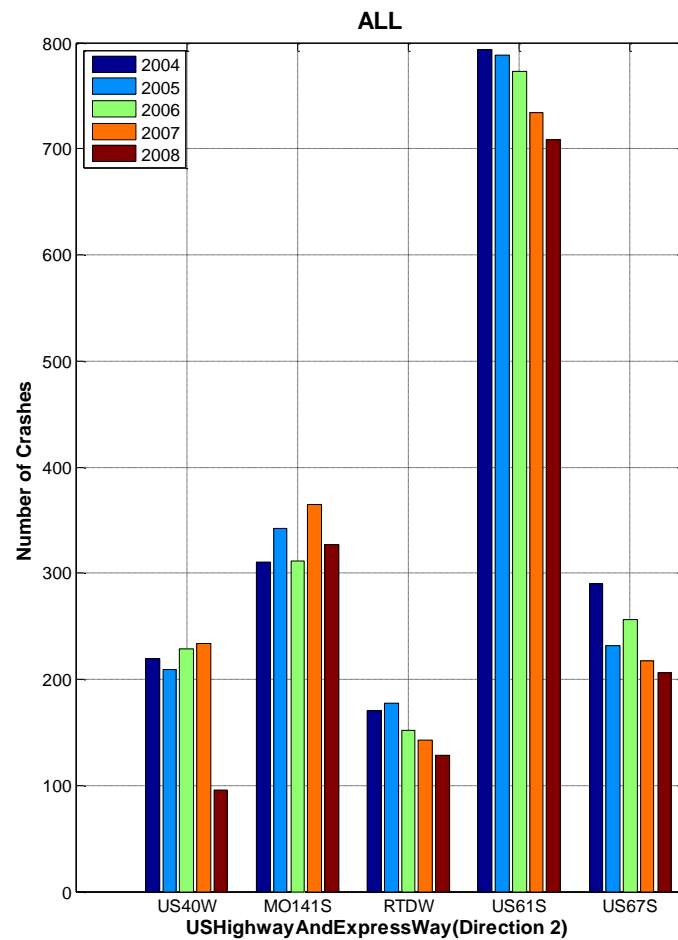
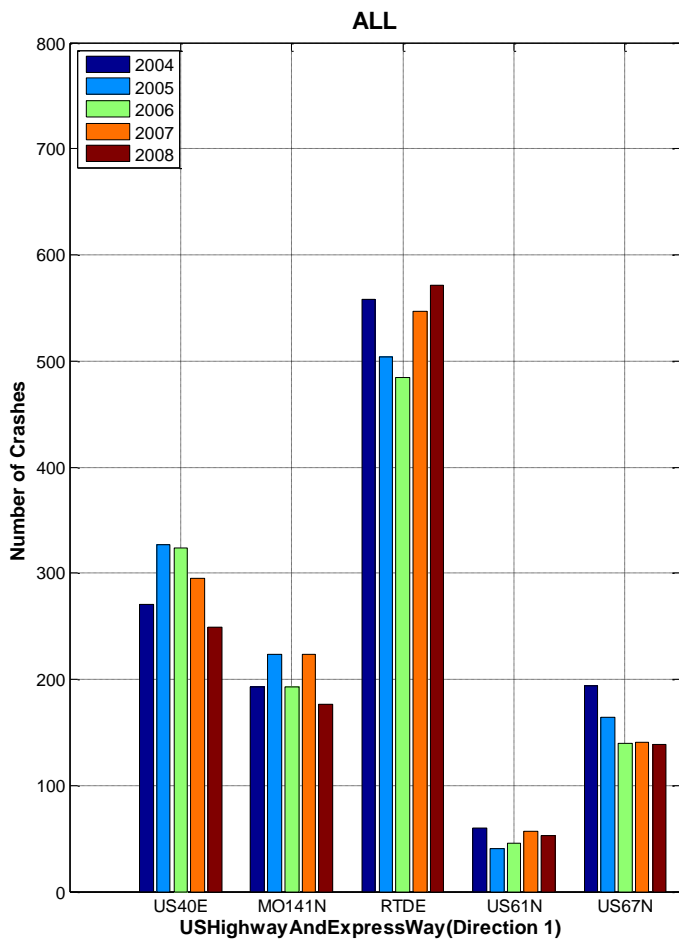


Figure S18: All Crashes on US Highway and Expressway (Both directions, 2004-2008)

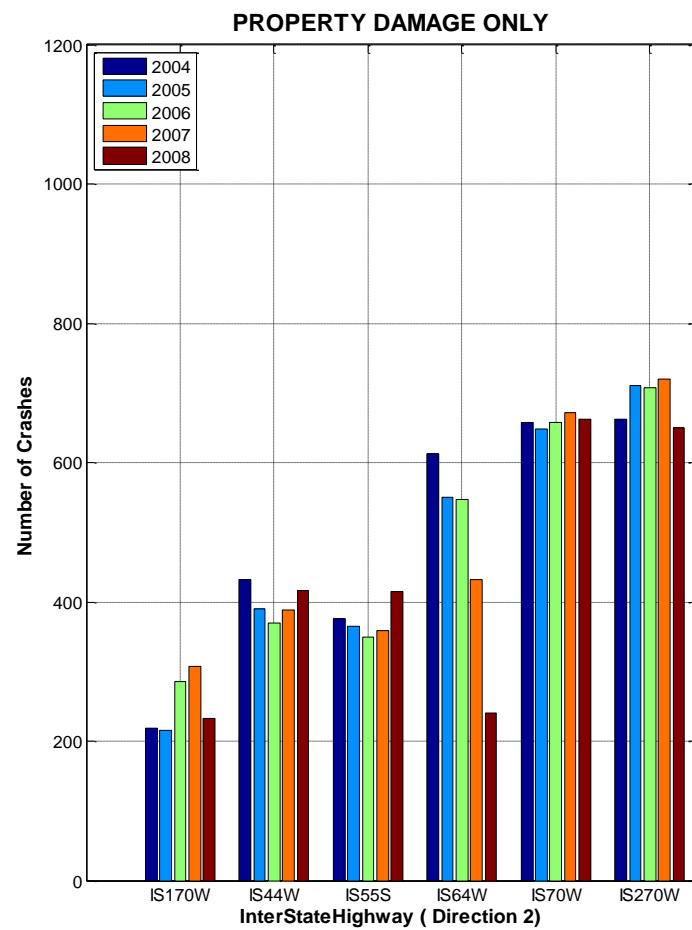
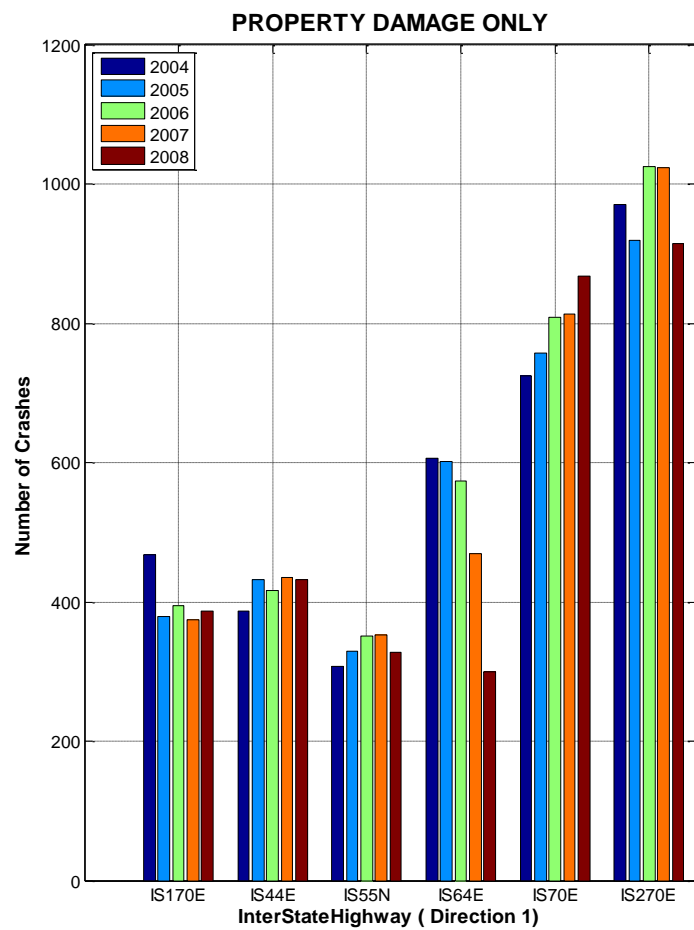


Figure S19: Property Damage in Interstate Highway (Both directions, 2004-2008)

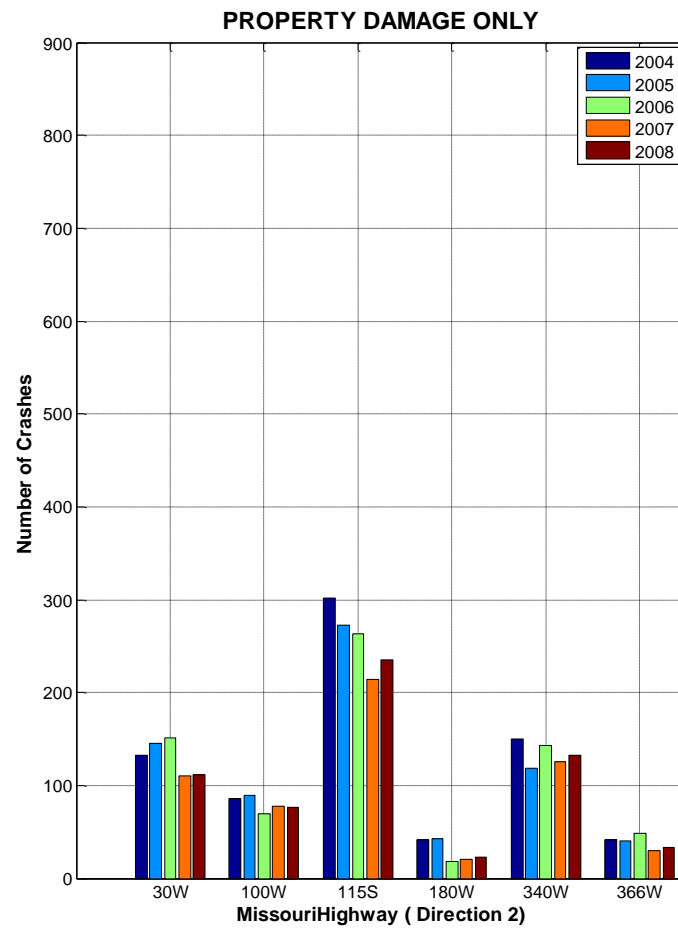
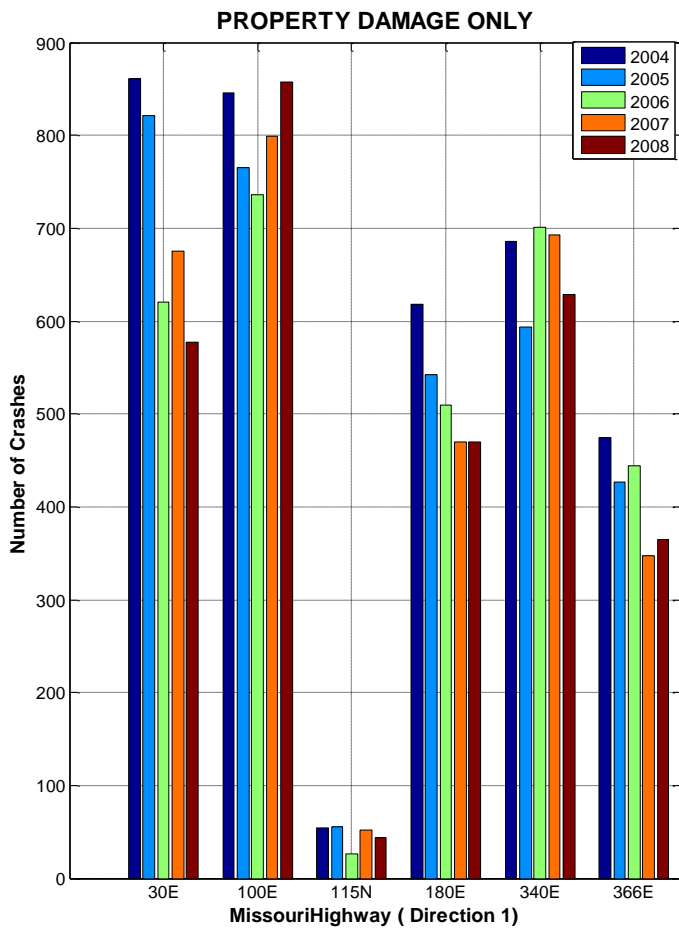


Figure S20: Property Damage in Missouri Highway (Both directions, 2004-2008)

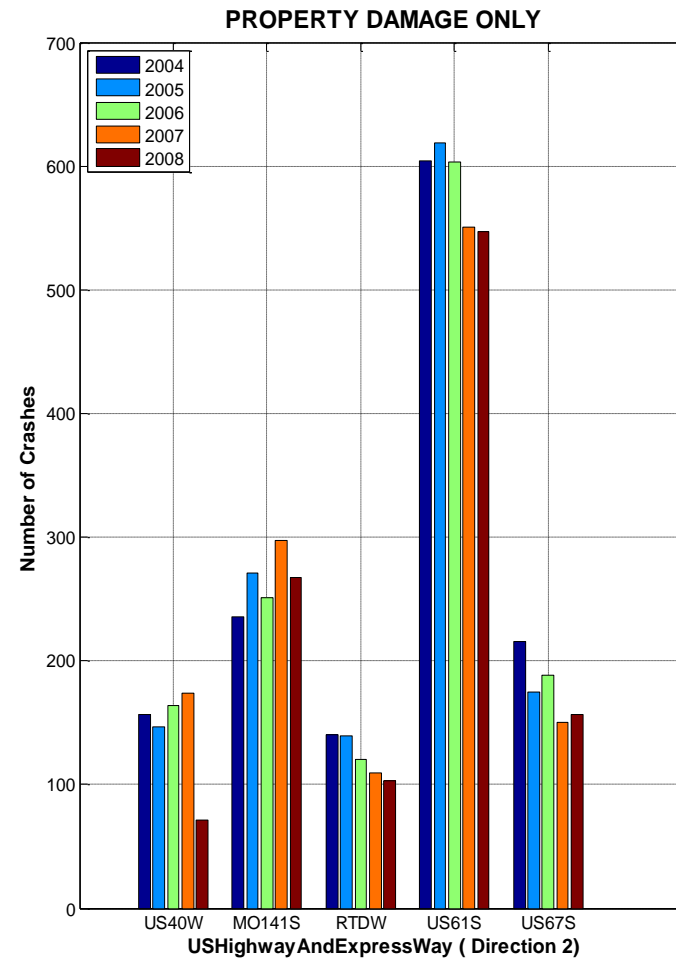
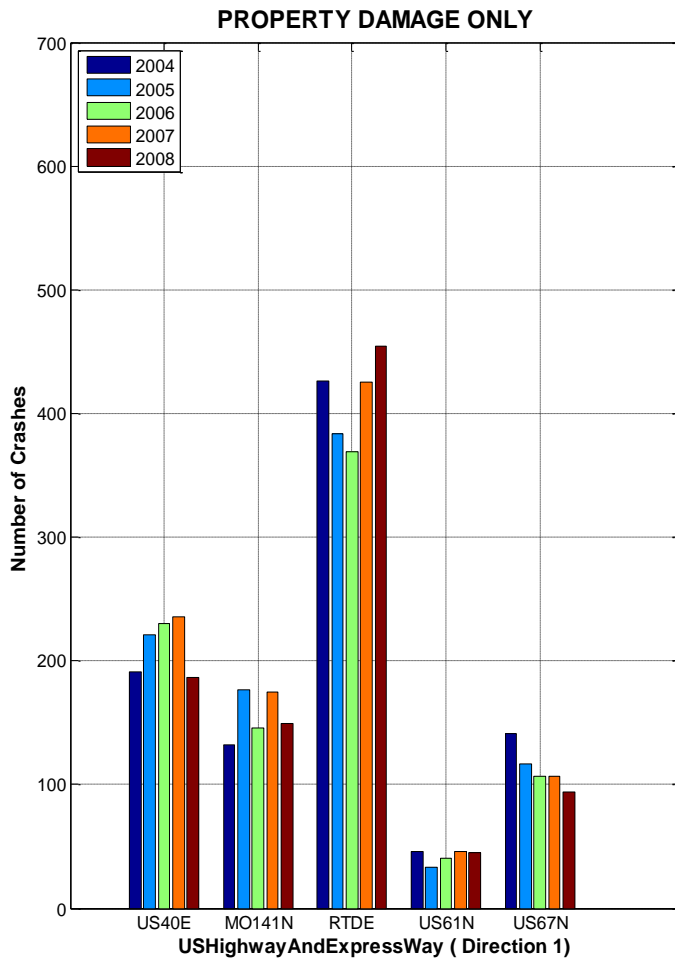


Figure S21: Property Damage in US Highway and Expressway (Both directions, 2004-2008)

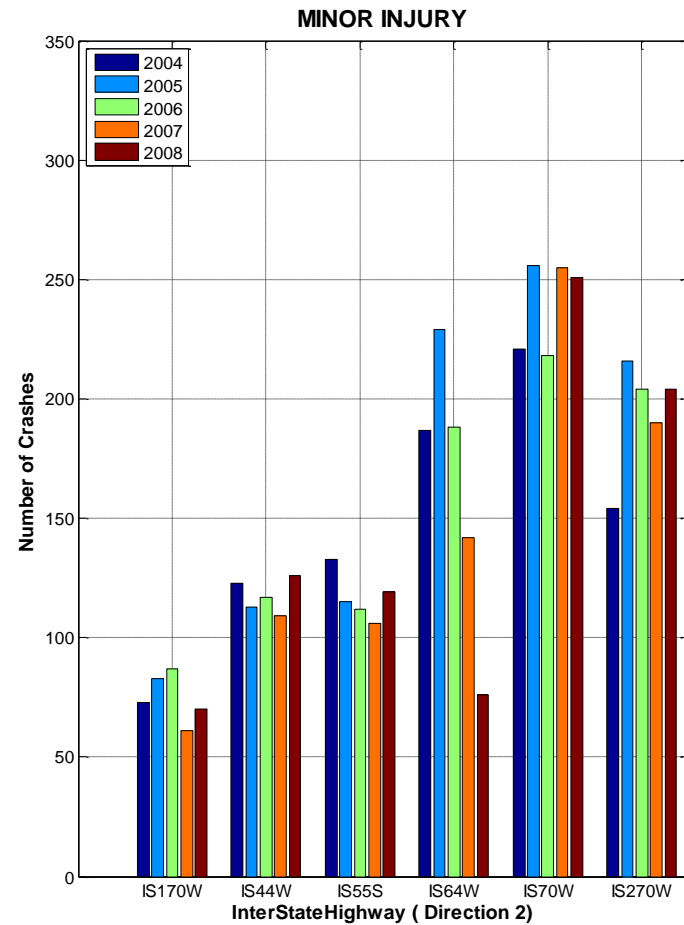
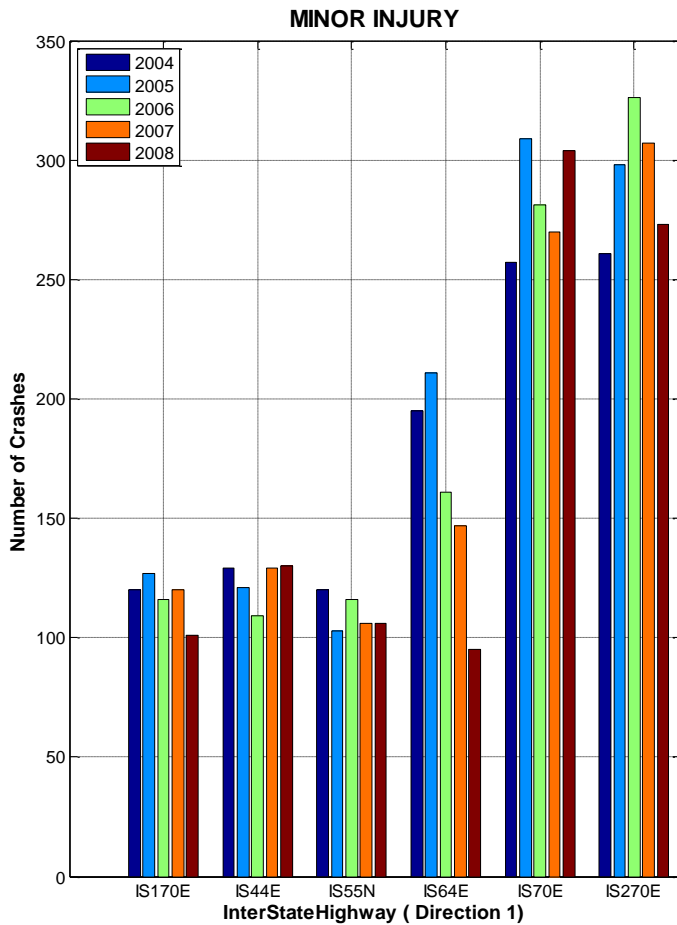


Figure S22: Minor Injury in Interstate Highway (Both directions, 2004-2008)

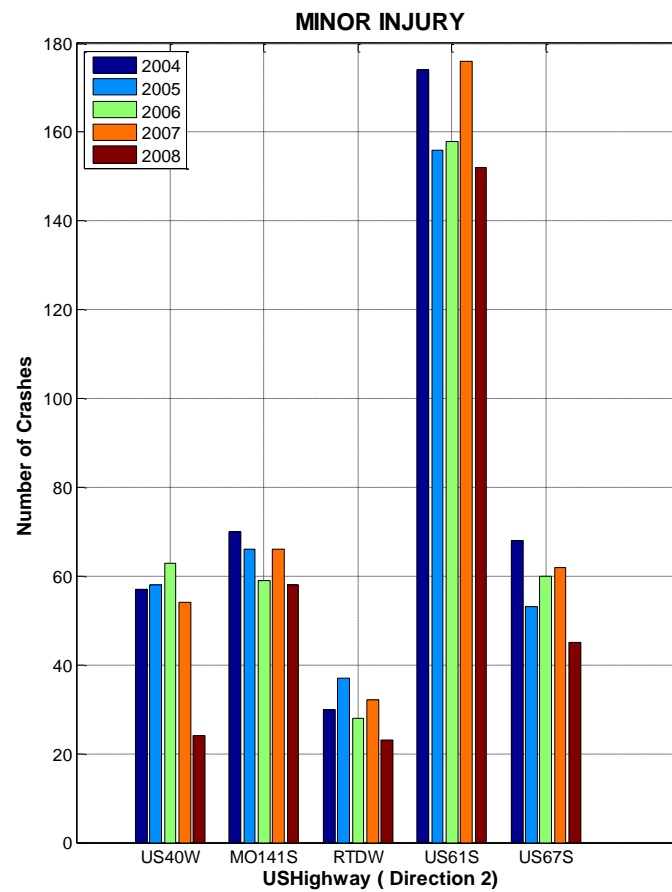
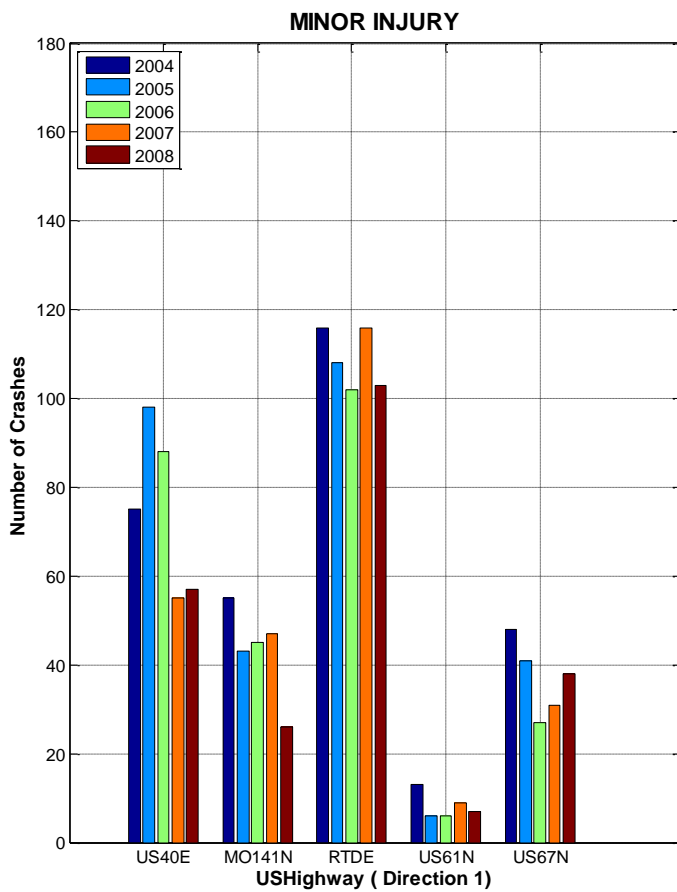


Figure S23: Minor Injury in US Highway and Expressway (Both directions, 2004-2008)

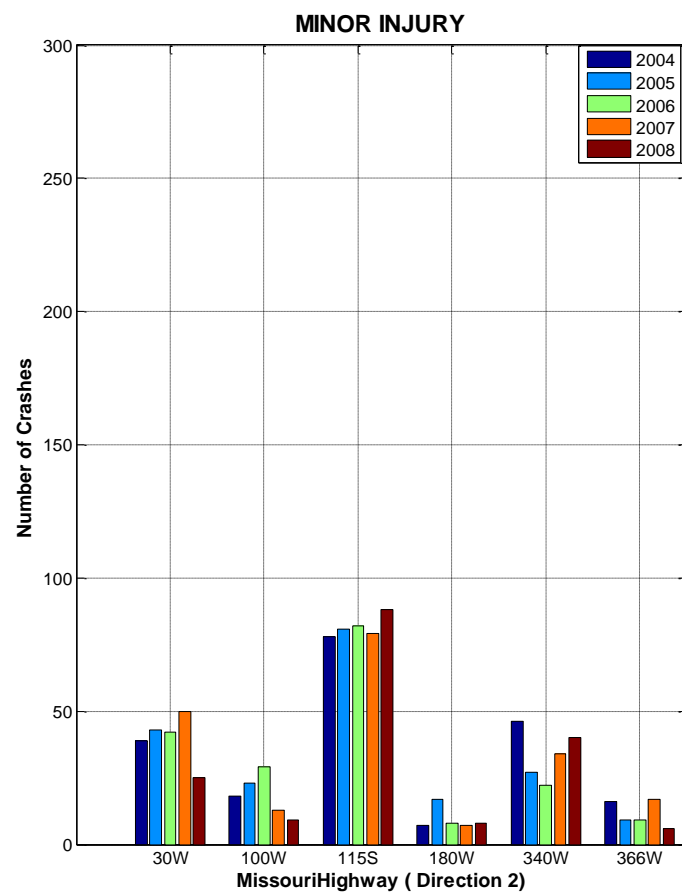
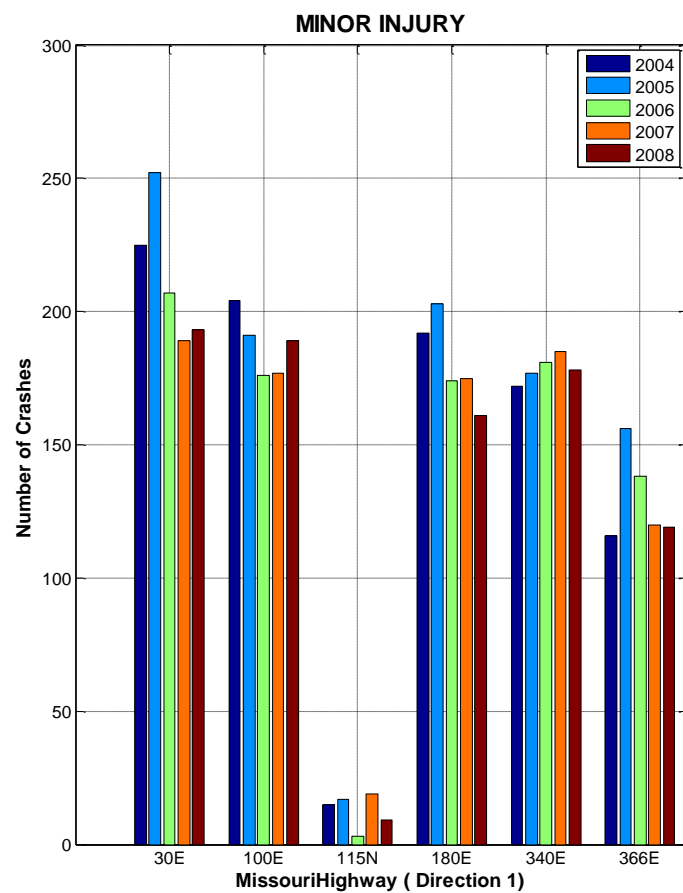


Figure S24: Minor Injury in Missouri Highway (Both directions, 2004-2008)

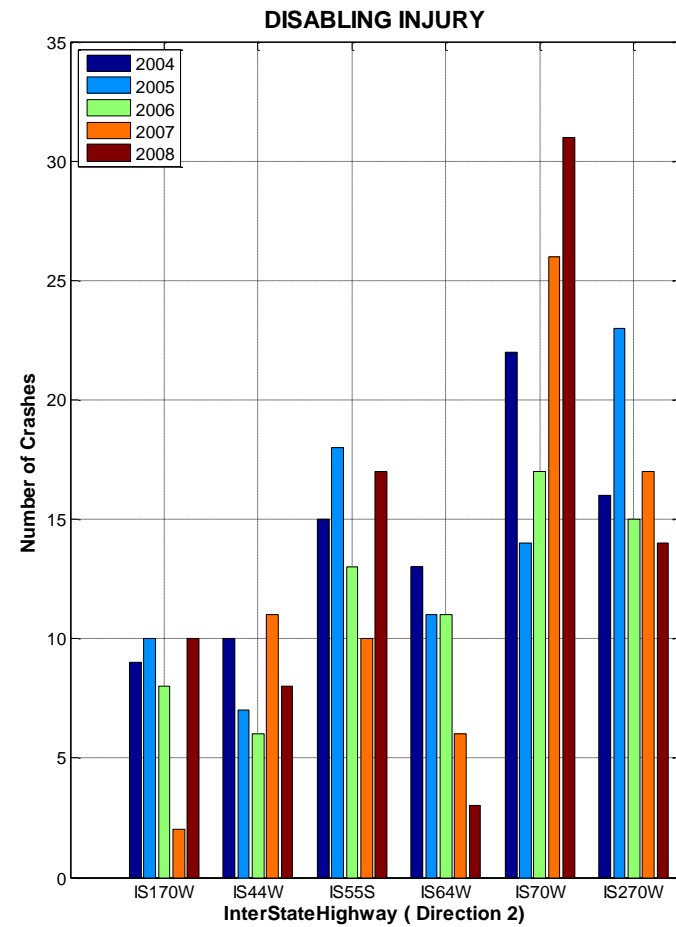
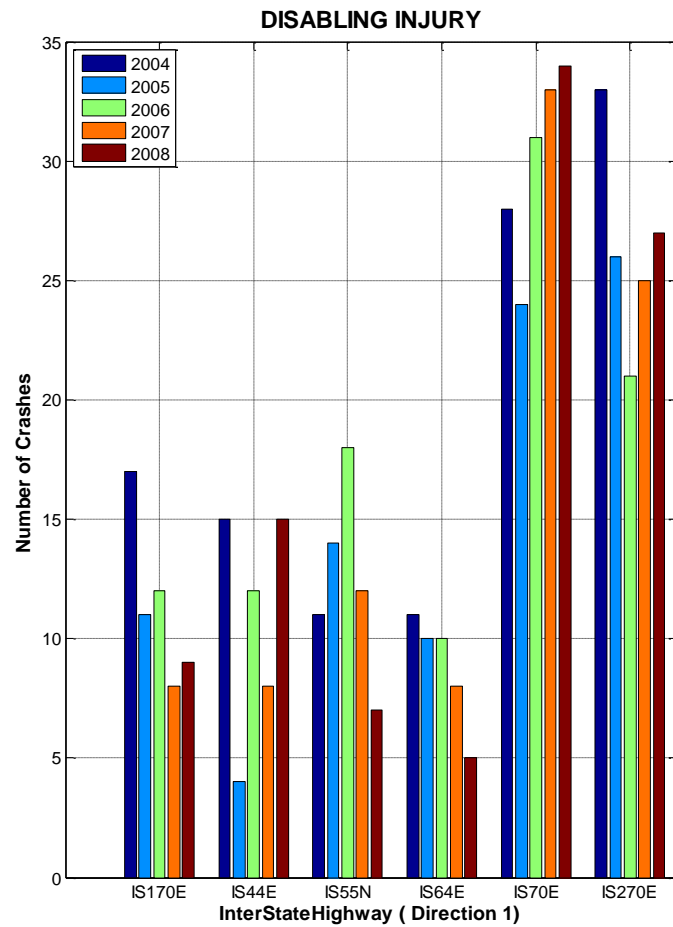


Figure S25: Disabling Injury in Interstate Highway (Both directions, 2004-2008)

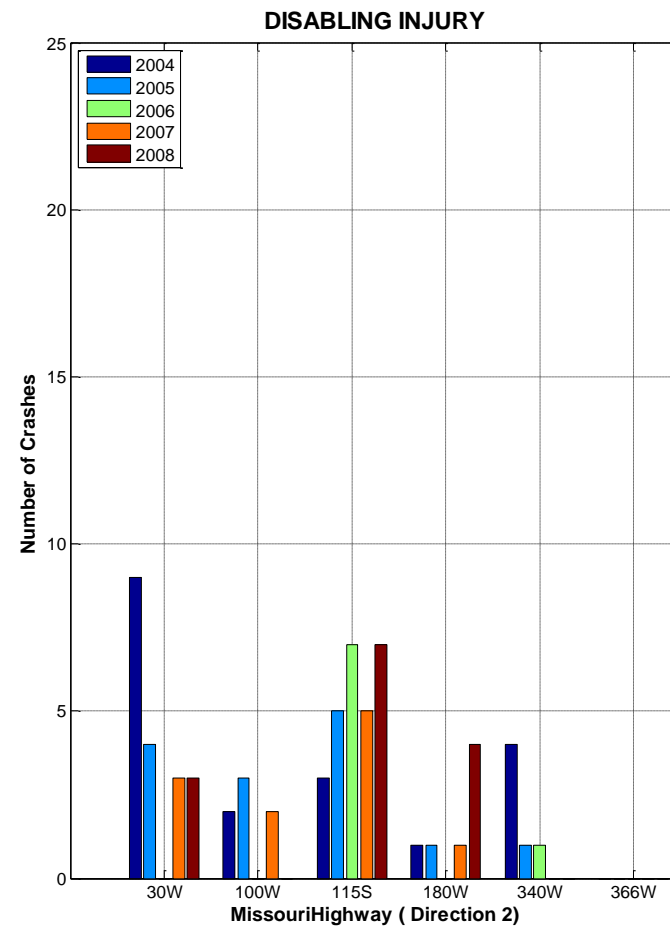
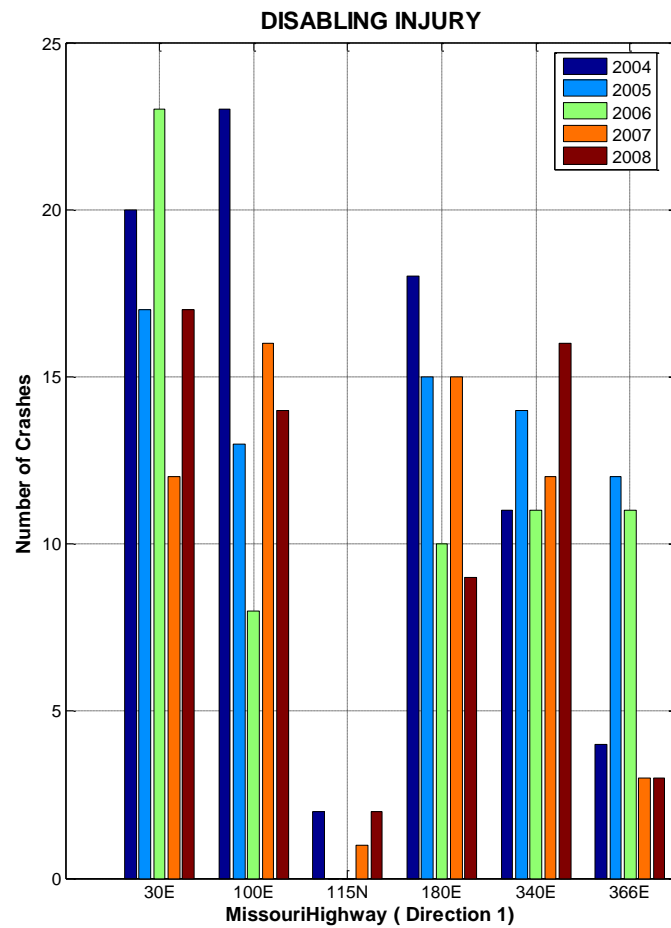


Figure S26: Disabling Injury in Missouri Highway (Both directions, 2004-2008)

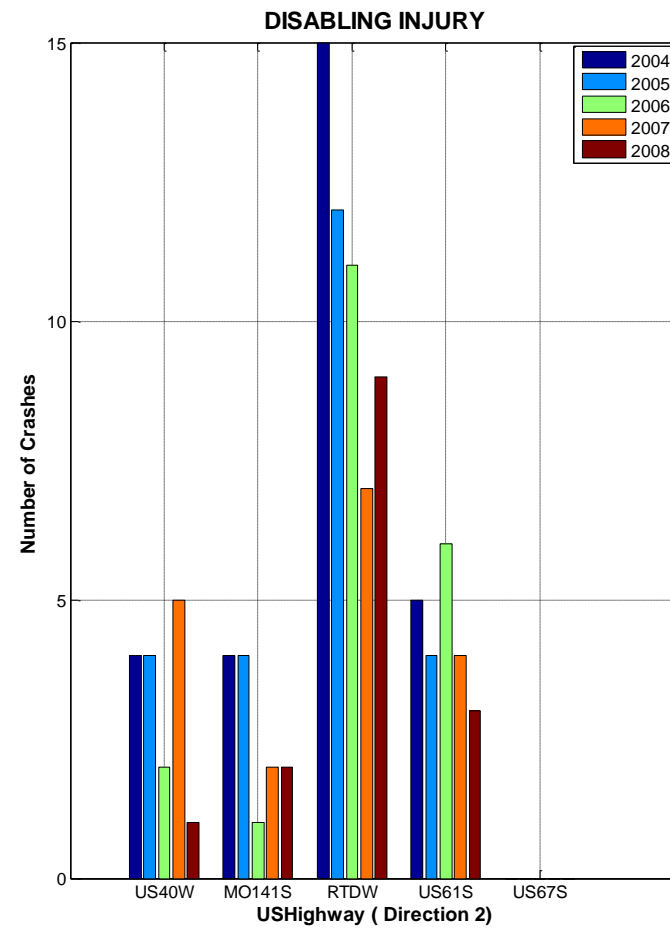
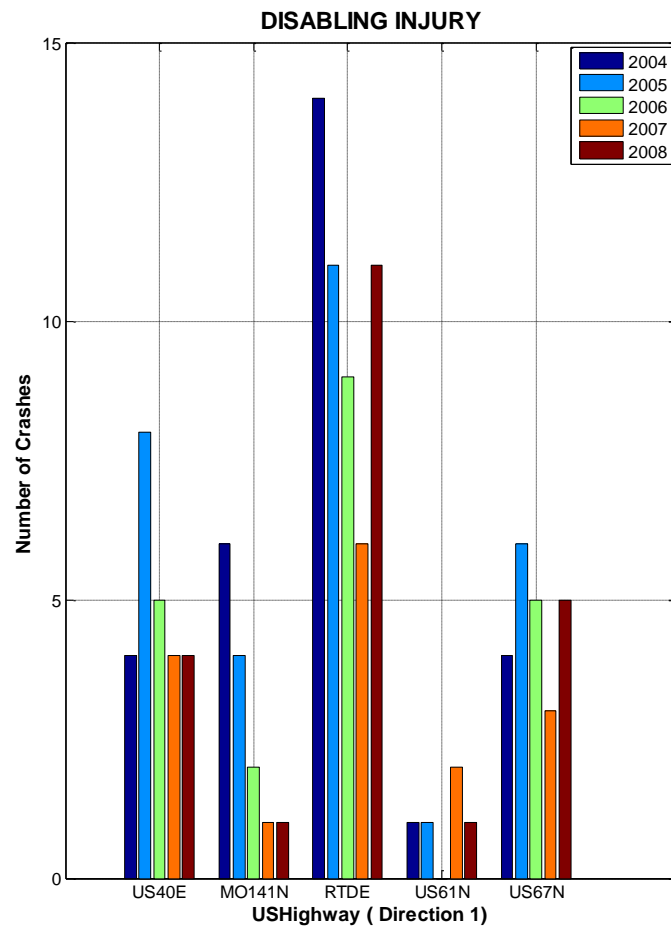


Figure S27: Disabling Injury in US Highway and Expressway (Both directions, 2004-2008)

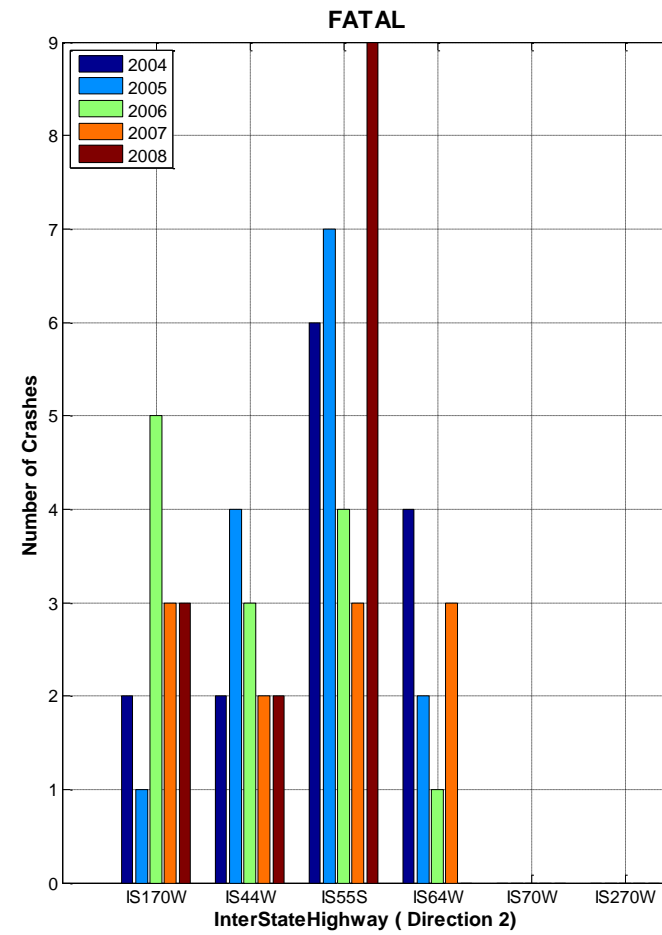
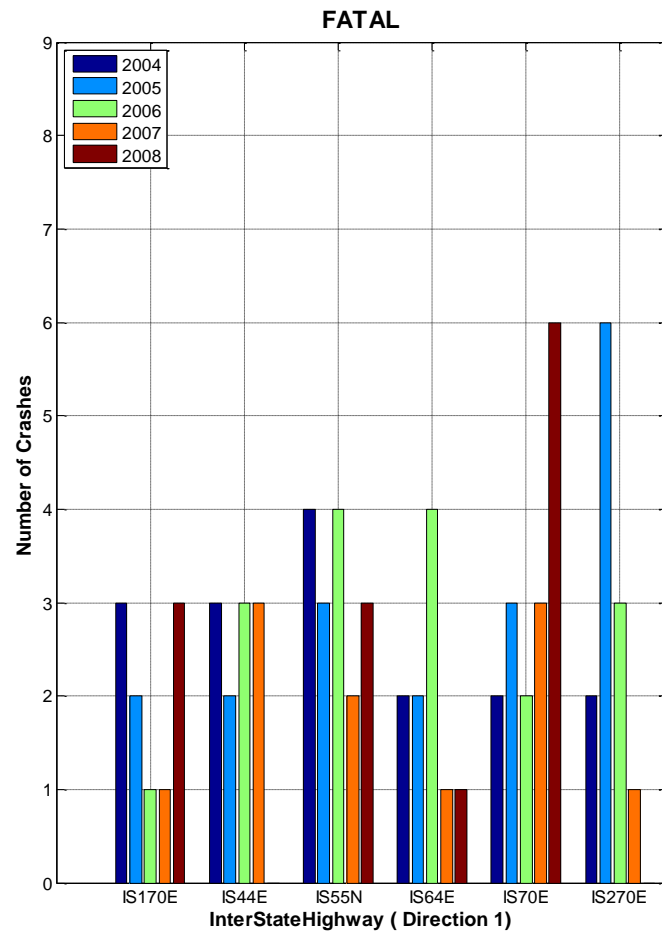


Figure S28: Fatality in Interstate Highway (Both directions, 2004-2008)

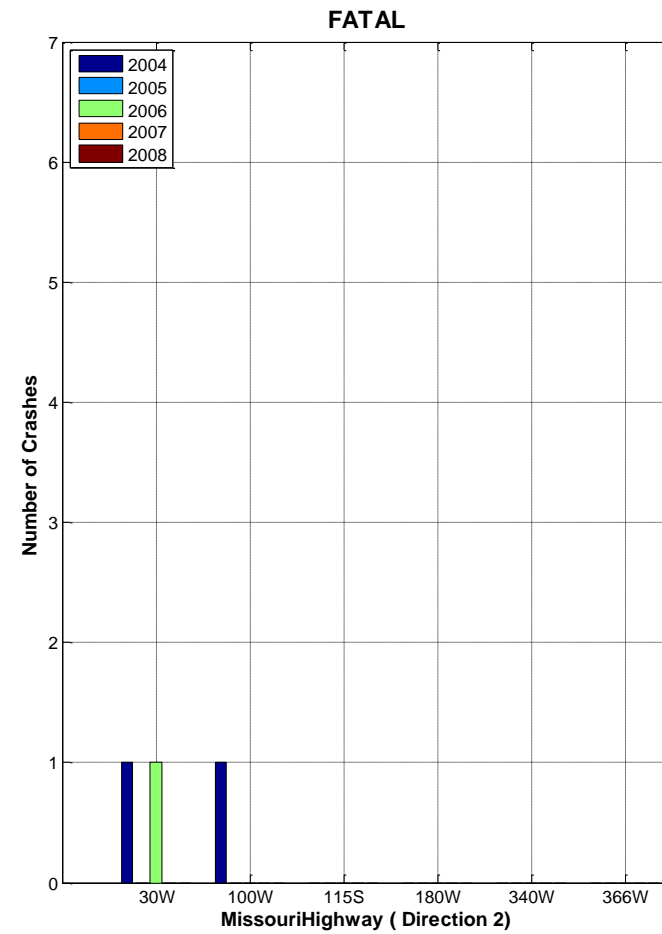
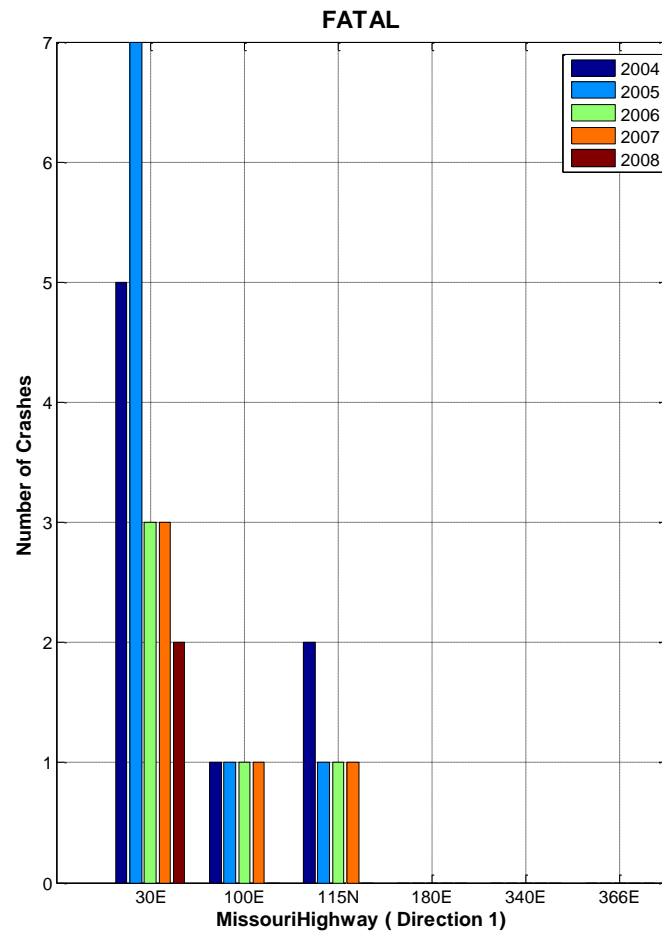


Figure S29: Fatality in Missouri Highway (Both directions, 2004-2008)

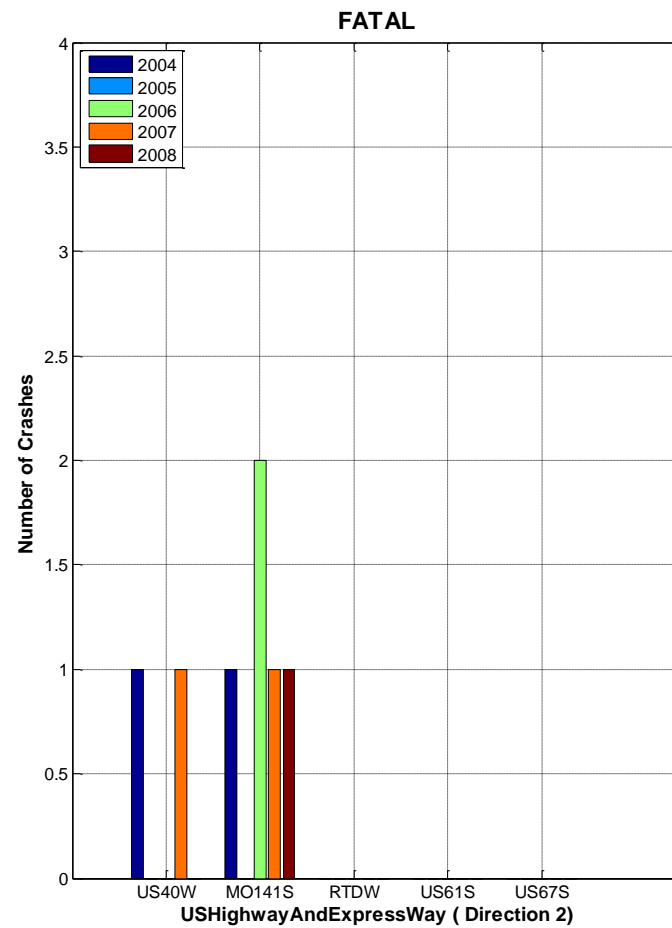
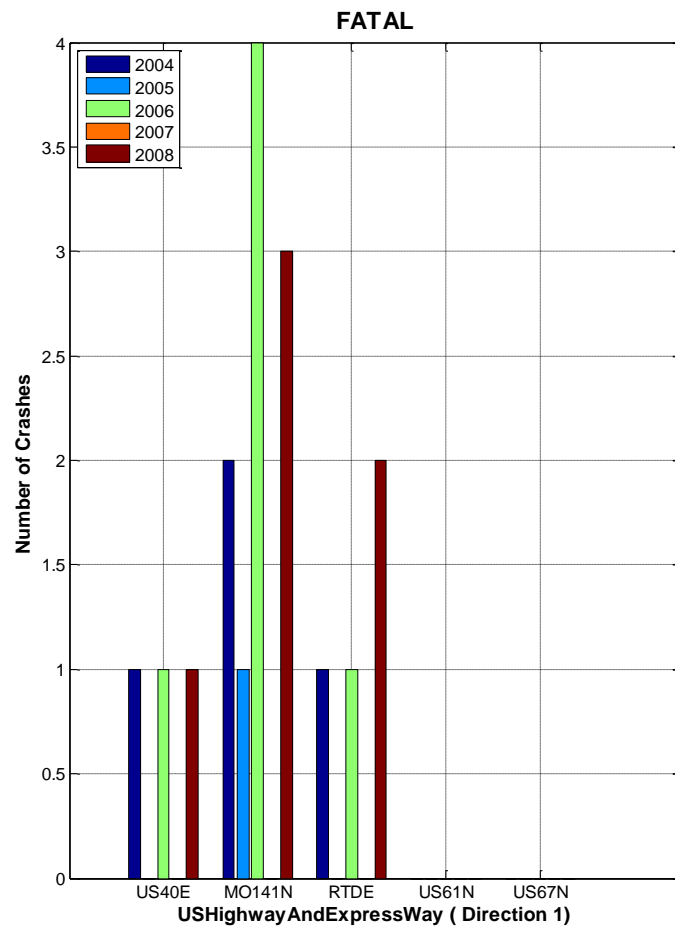


Figure S30: Fatality in US Highway and Expressway (Both directions, 2004-2008)

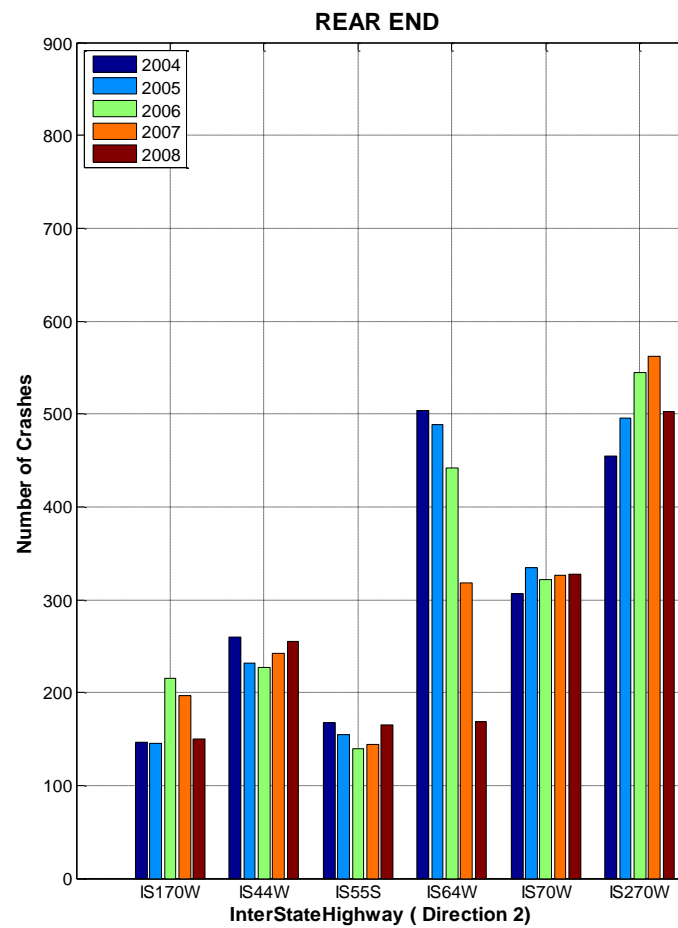
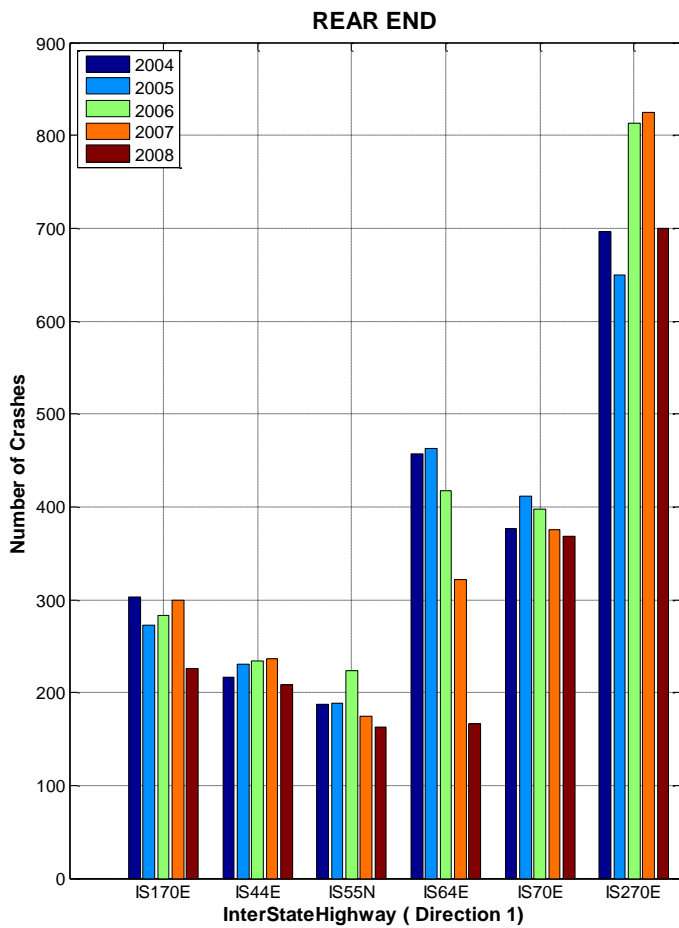


Figure S31: REAR-END in Inter-State Highway (Both directions, 2004-2008)

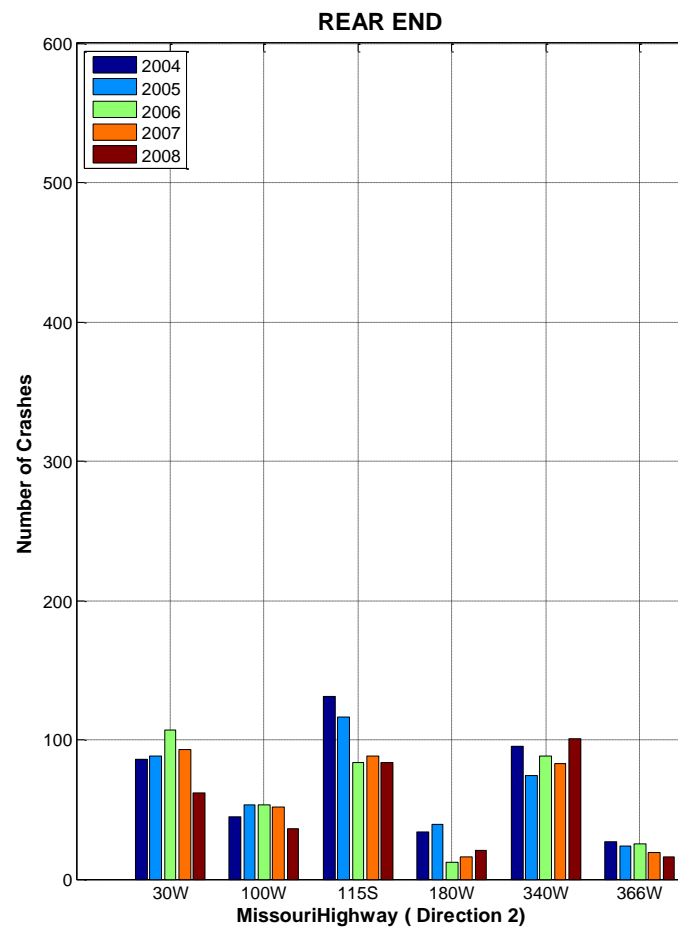
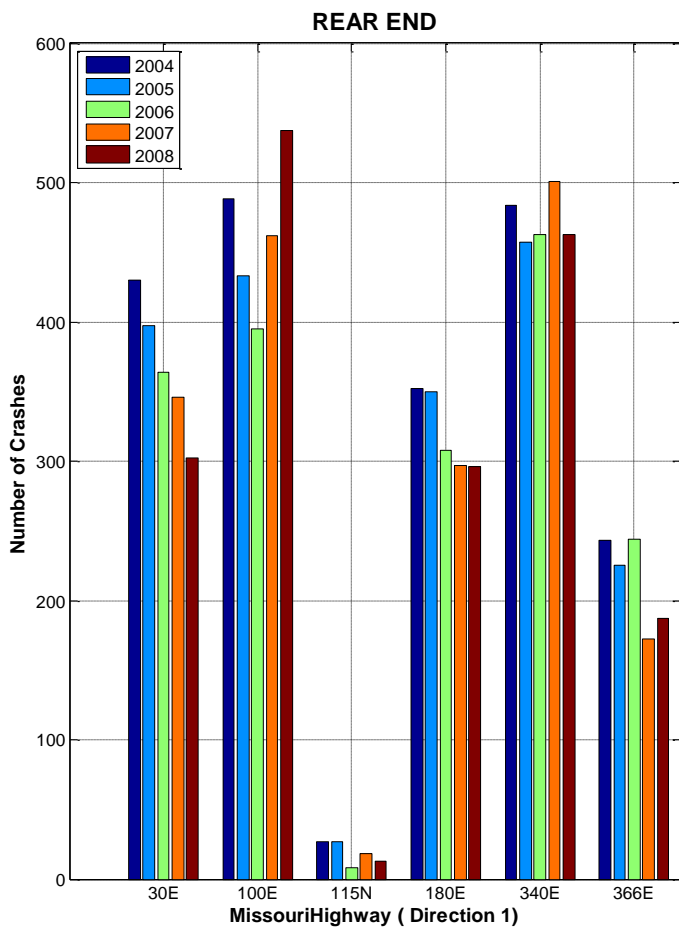


Figure S32: REAR-END in MO Highway (Both directions, 2004-2008)

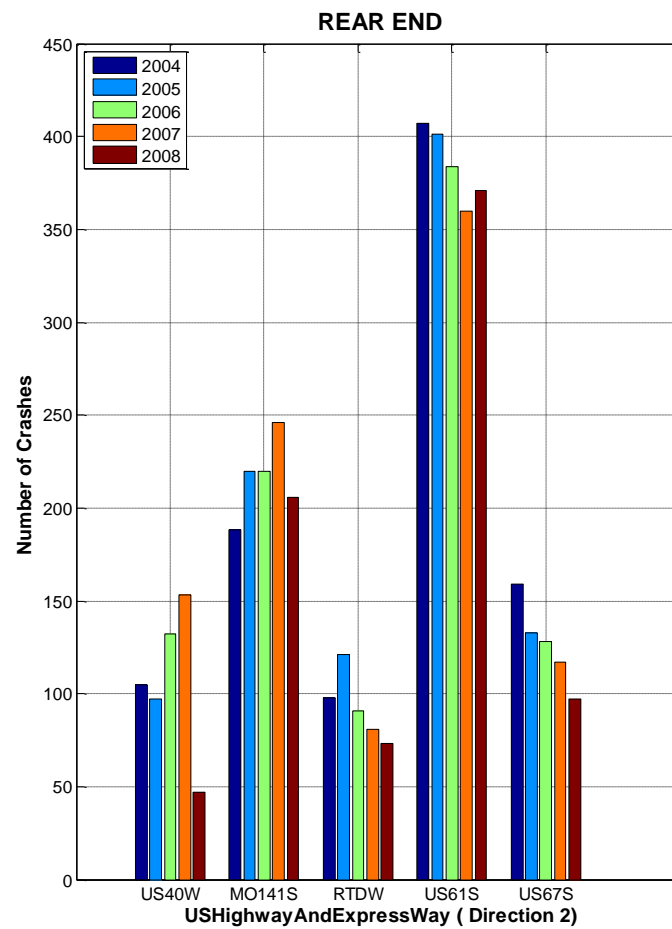
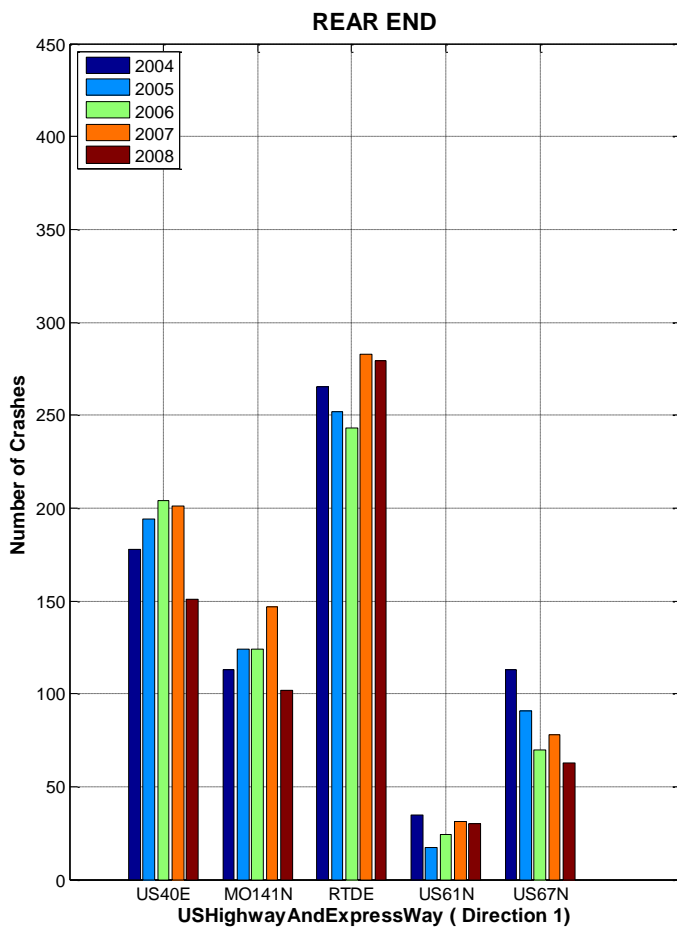


Figure S33: REAR-END in US Highway (Both directions, 2004-2008)

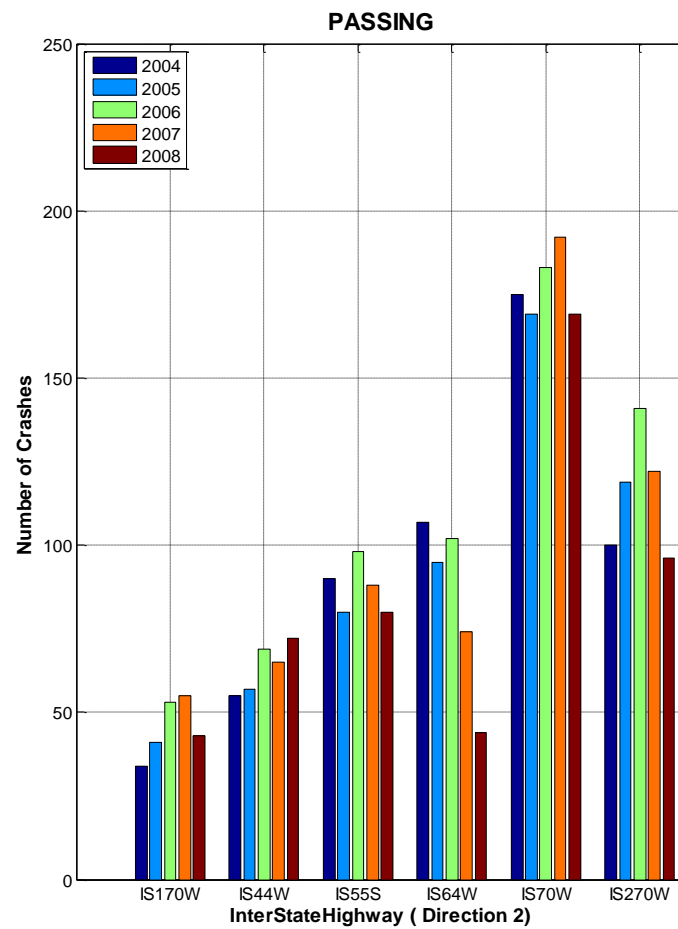
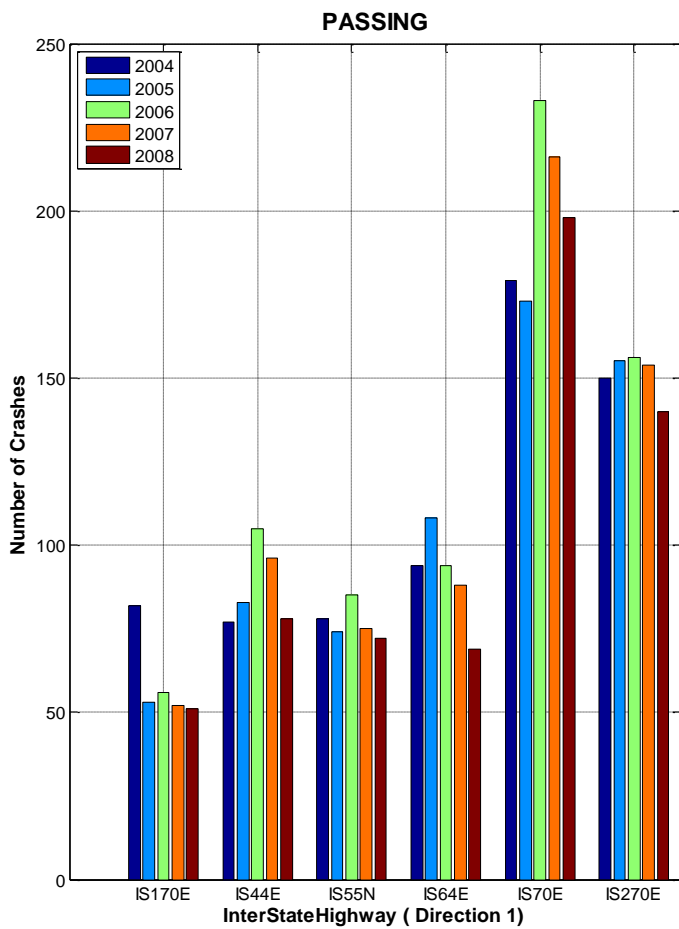


Figure S34: PASSING in Inter-State Highway (Both directions, 2004-2008)

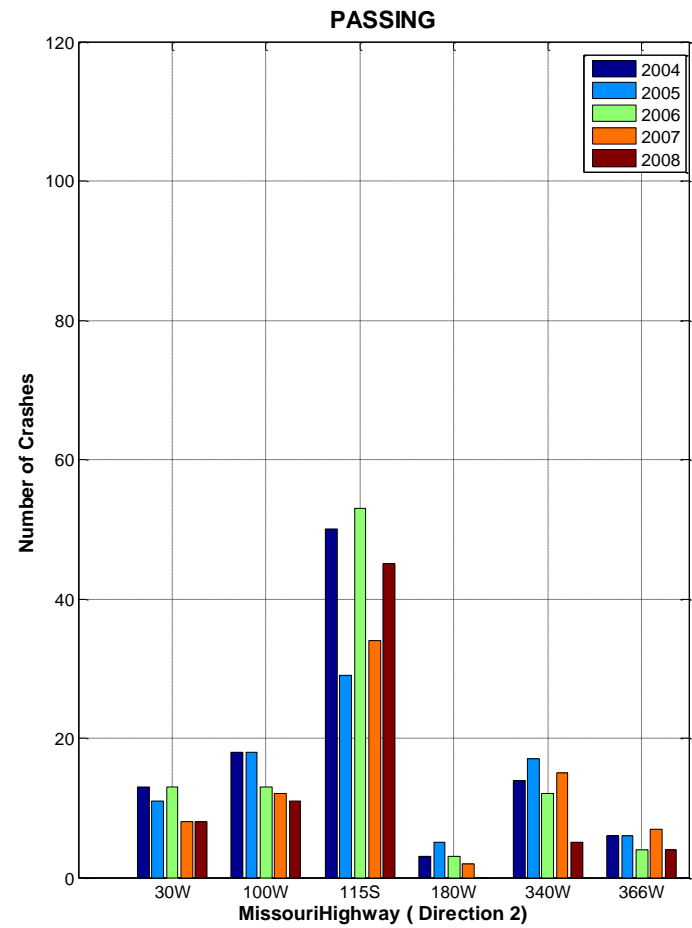
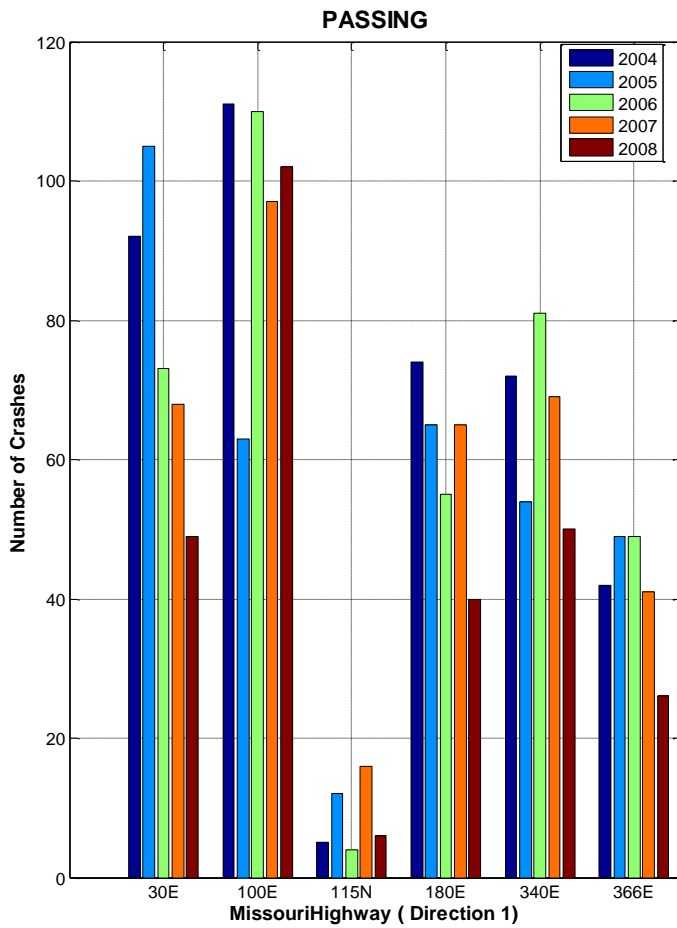


Figure S35: PASSING in Missouri Highway (Both directions, 2004-2008)

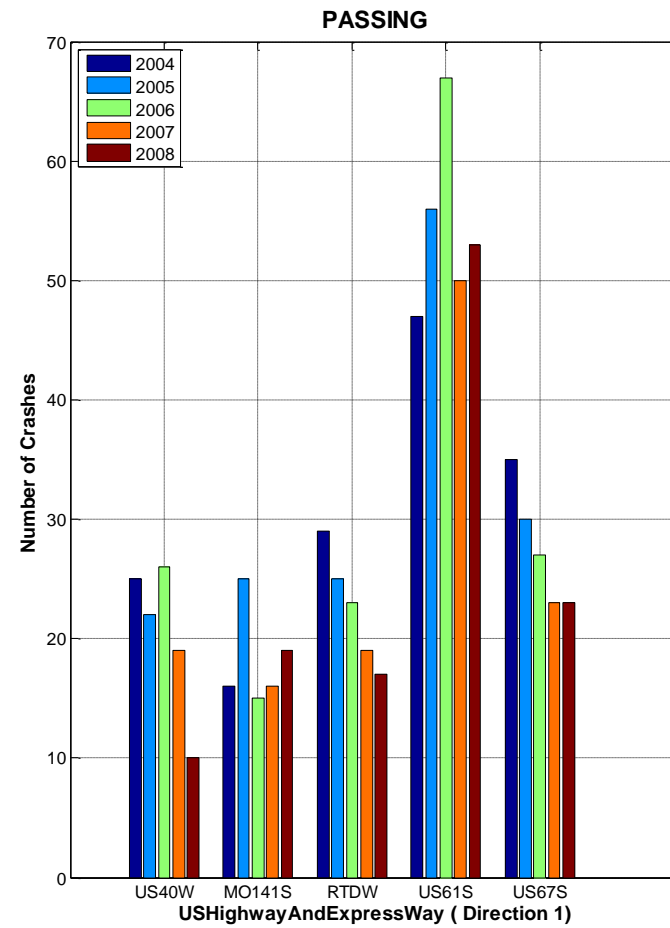
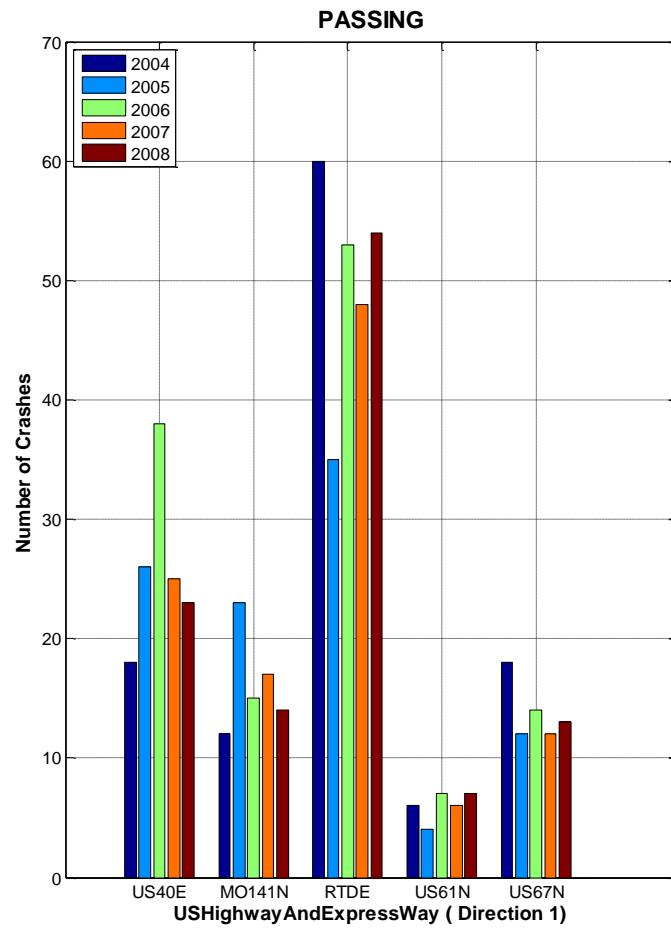


Figure S36: PASSING in US Highway (Both directions, 2004-2008)

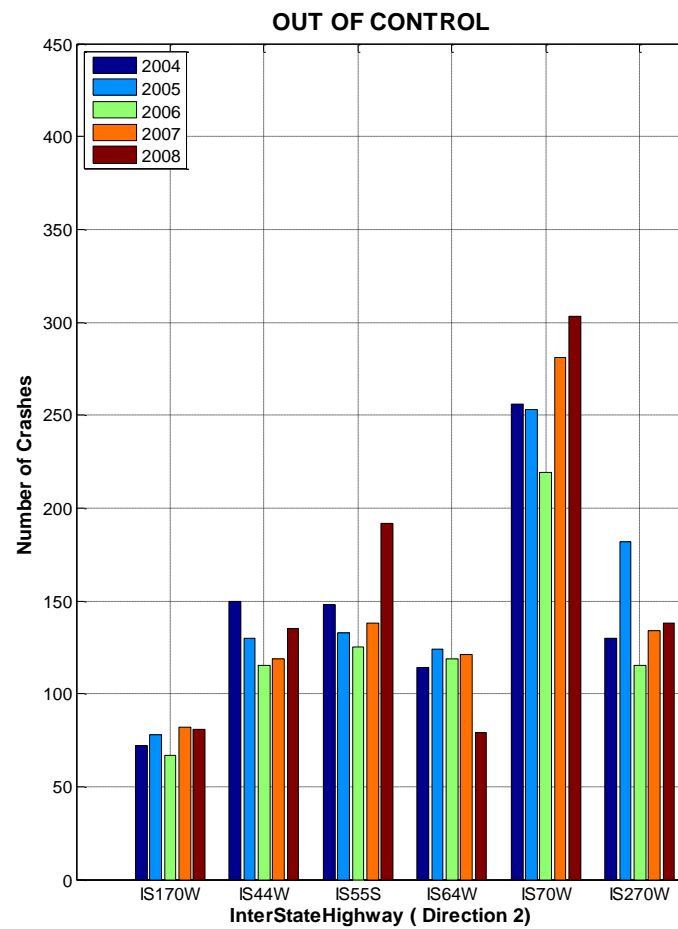
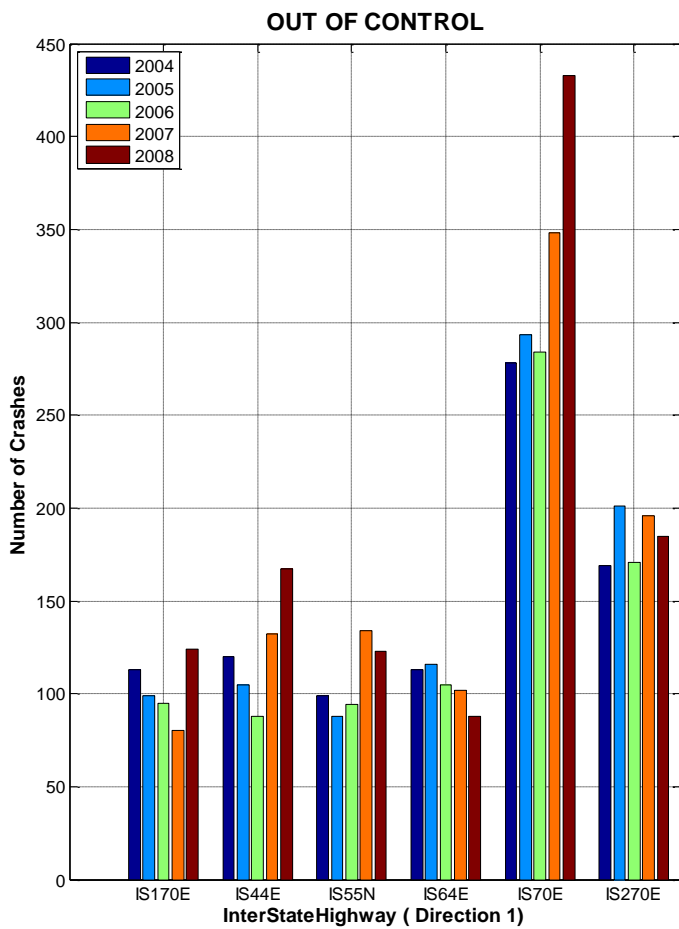


Figure S37: Out of Control in Interstate Highway (Both directions, 2004-2008)

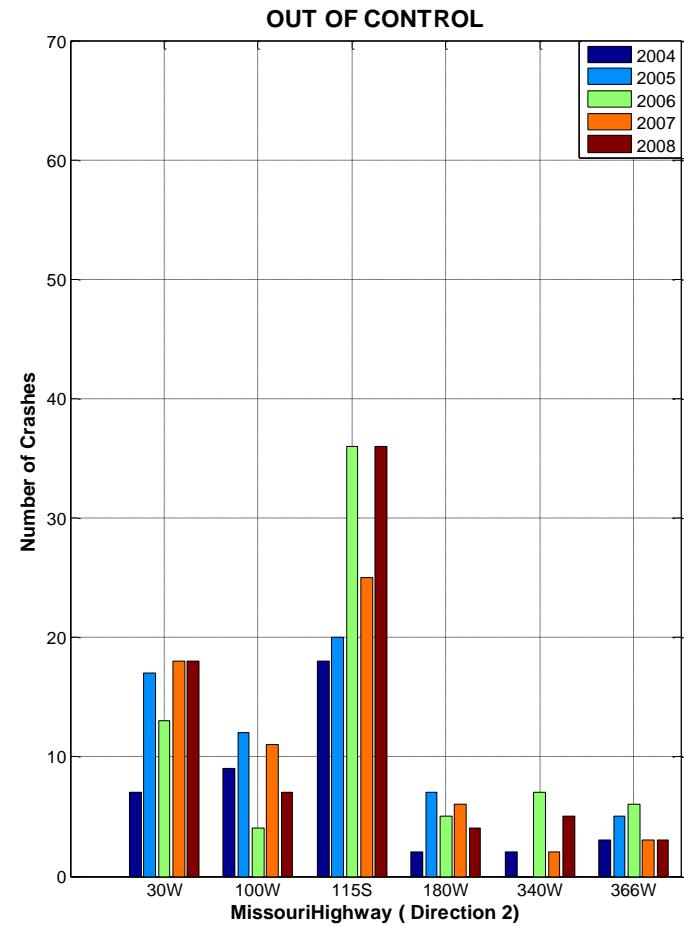
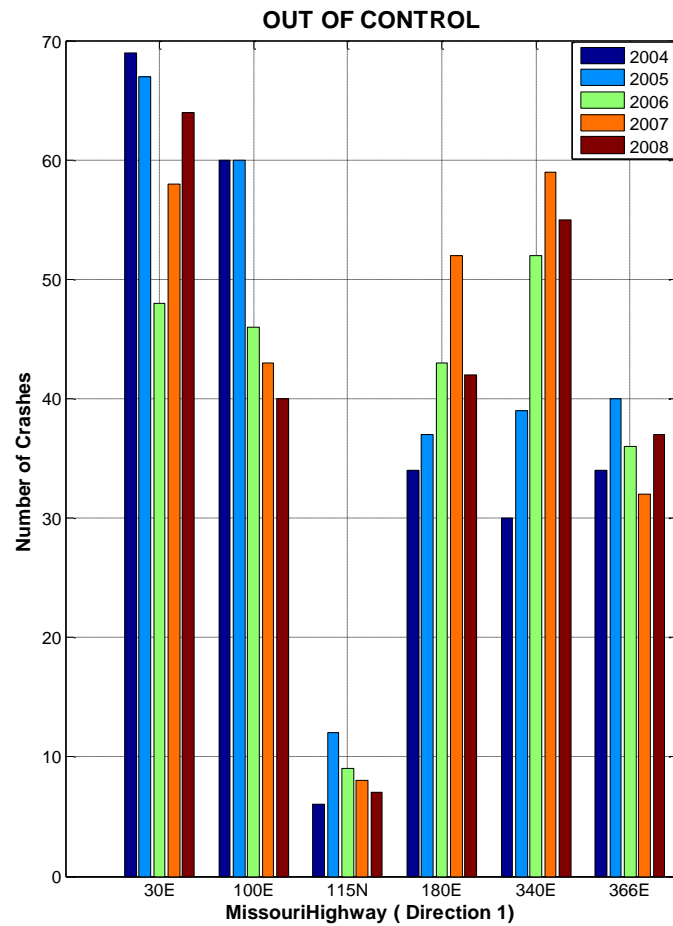


Figure S38: Out of Control in Missouri Highway (Both directions, 2004-2008)

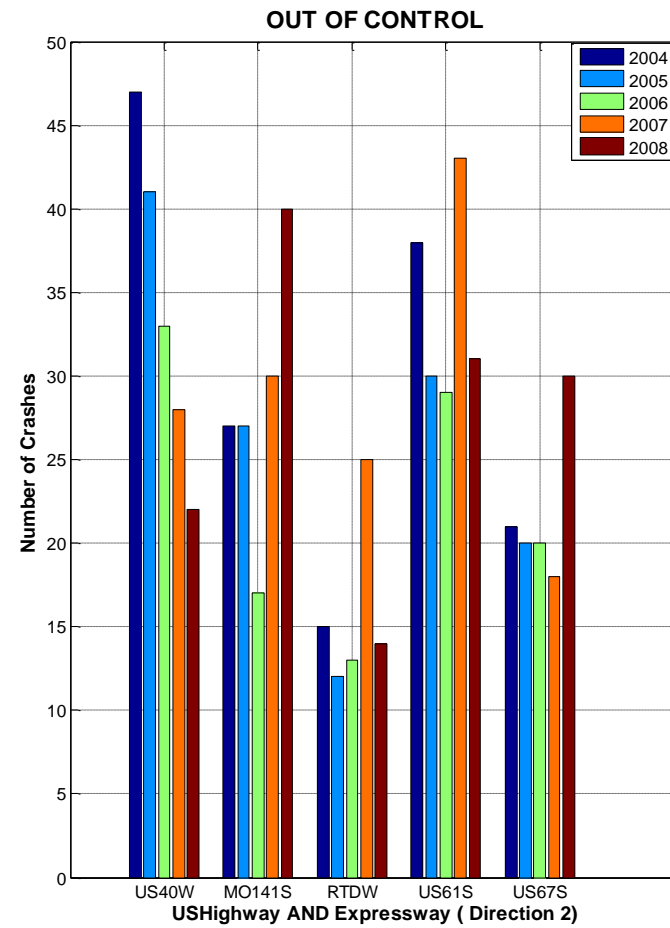
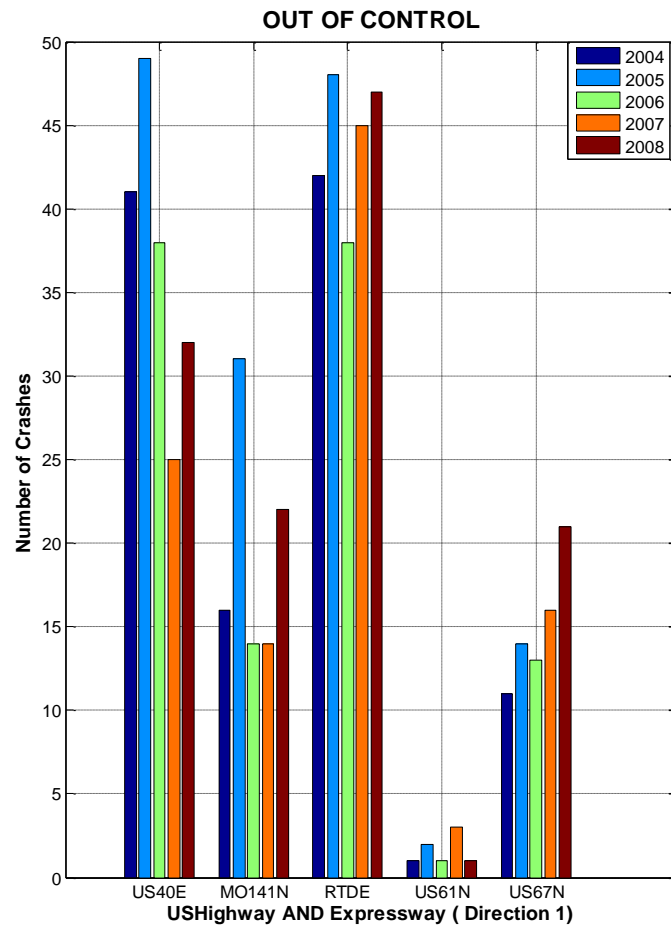


Figure S39: Out of Control in US Highway (Both directions, 2004-2008)

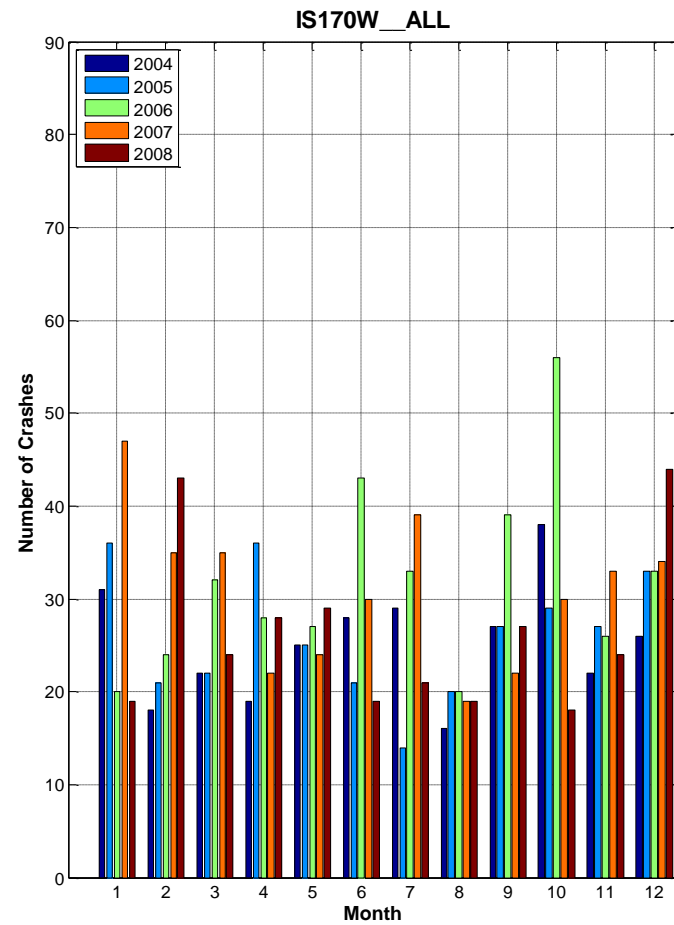
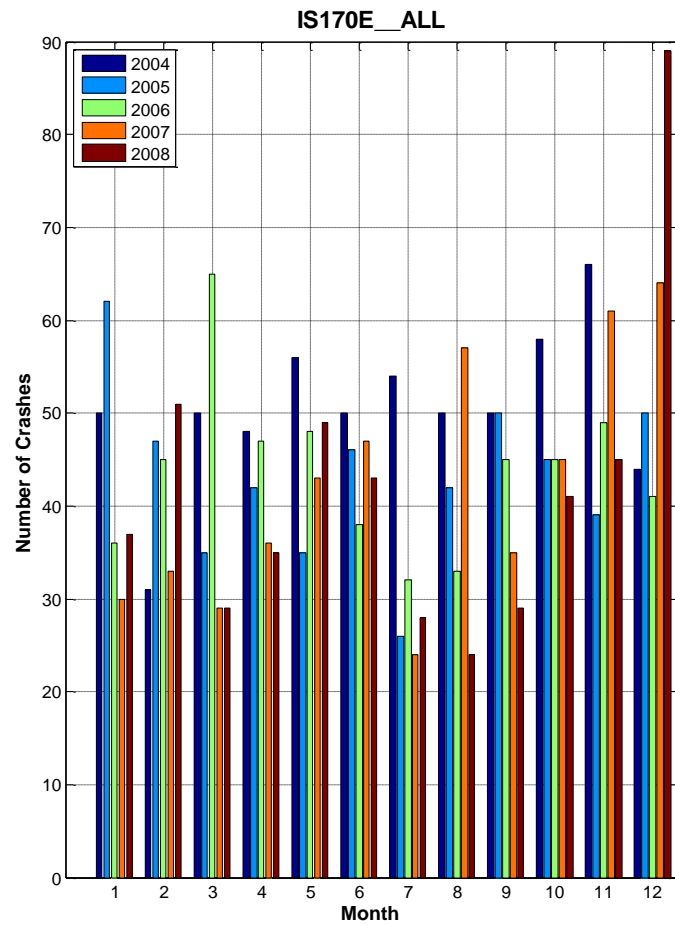


Figure S40: Crashes by Month on IS170 (Both directions, 2004-2008)

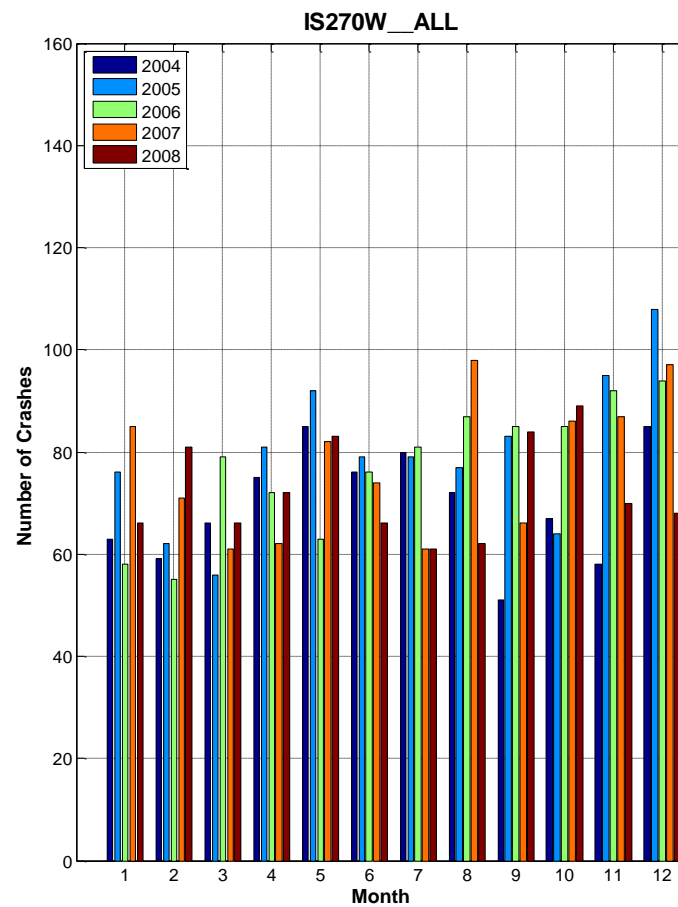
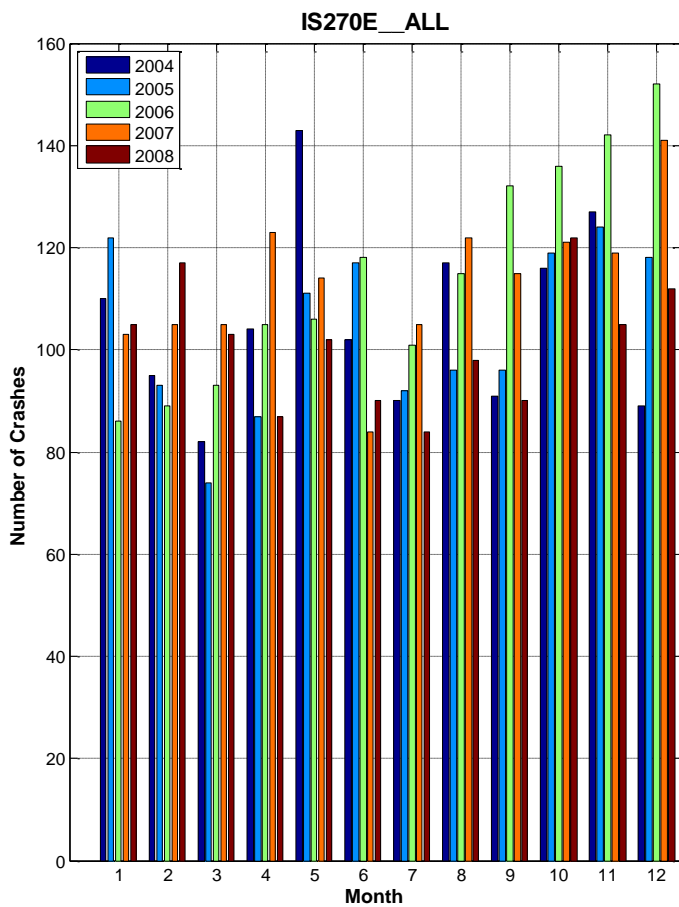


Figure S41: Crashes by Month on I-270 (Both directions, 2004-2008)

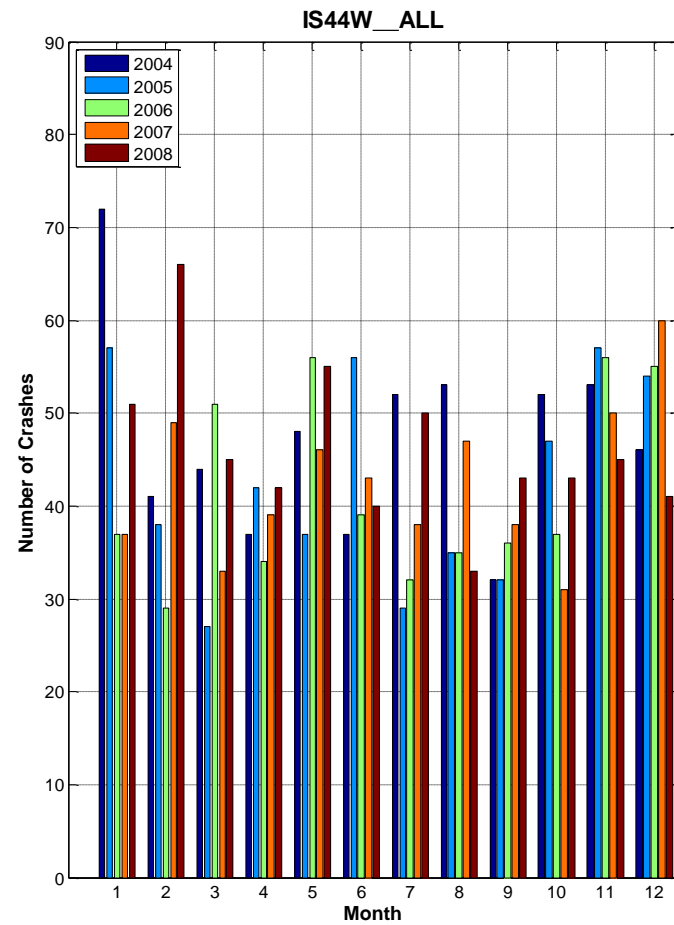
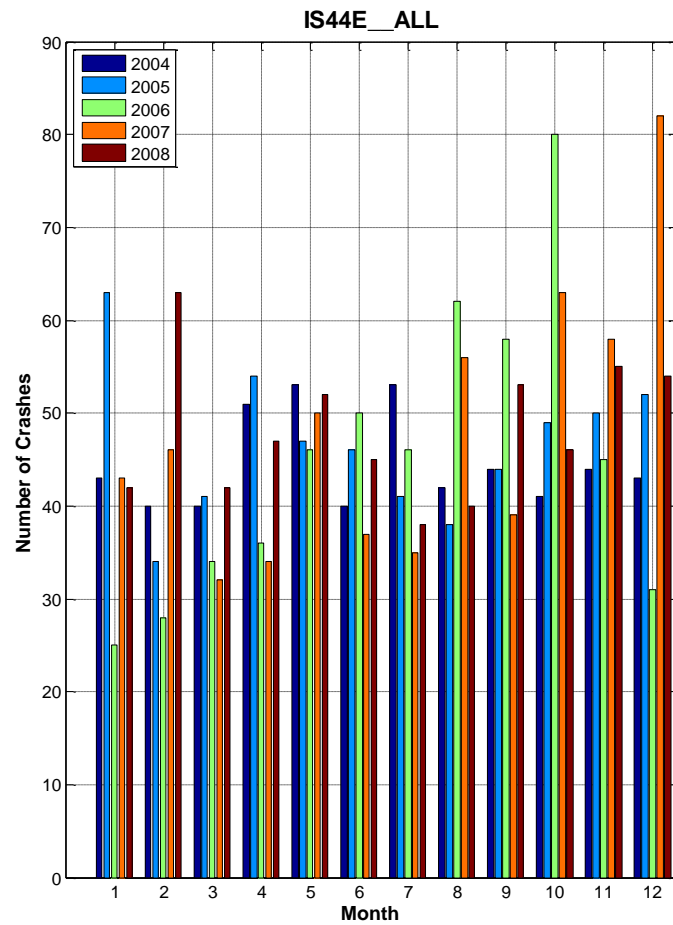


Figure S42: Crashes by Month on I-44 (Both directions, 2004-2008)

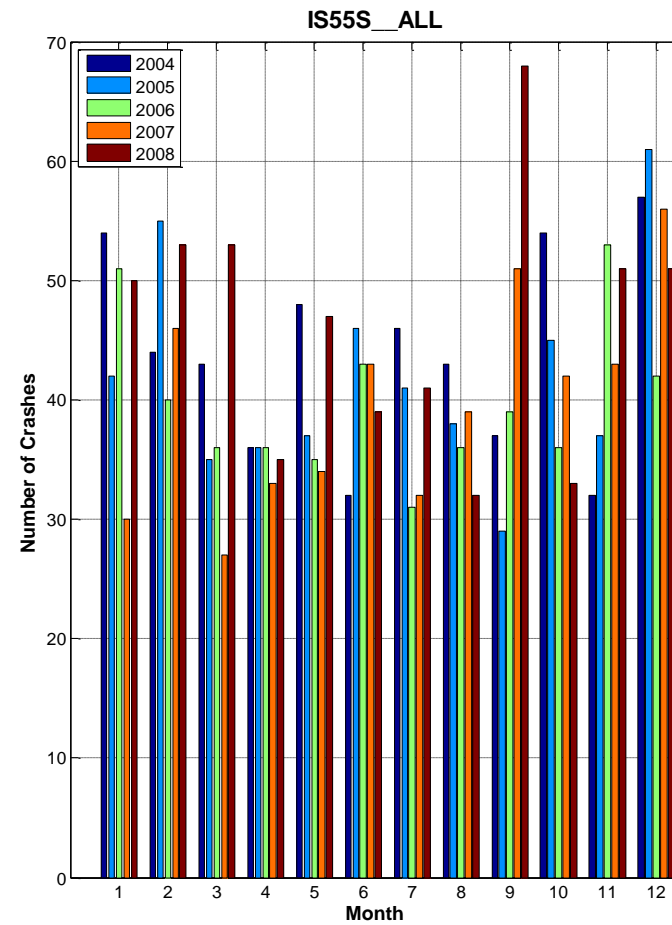
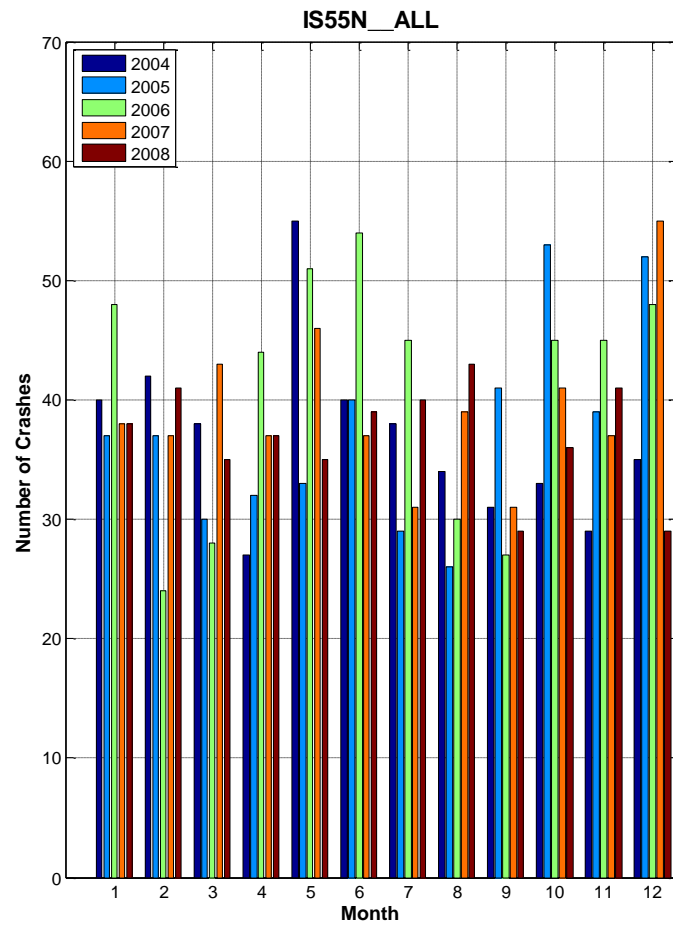


Figure S43: Crashes by Month on I-55 (Both directions, 2004-2008)

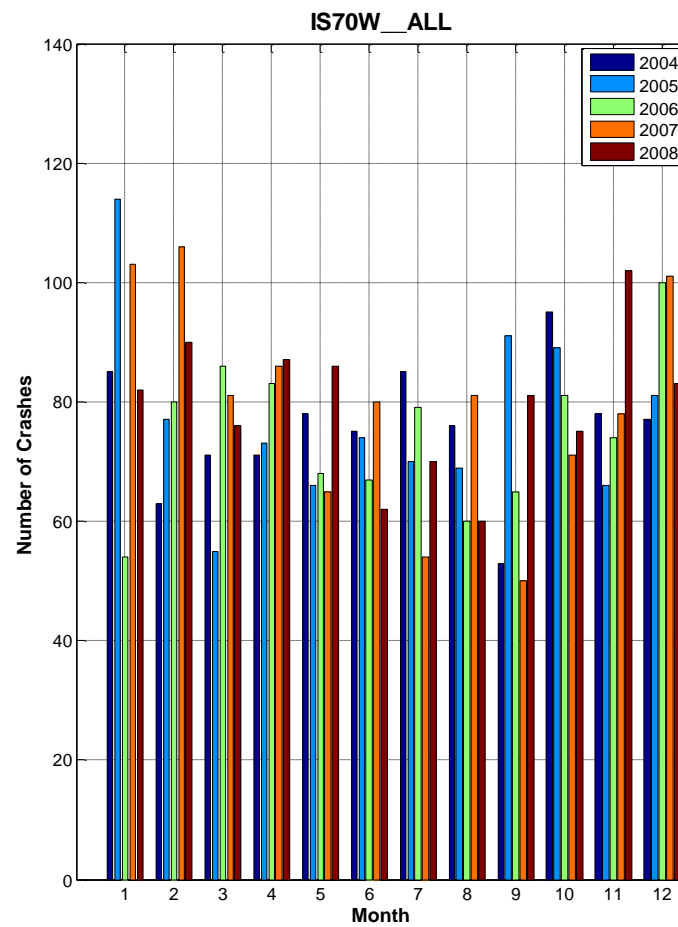
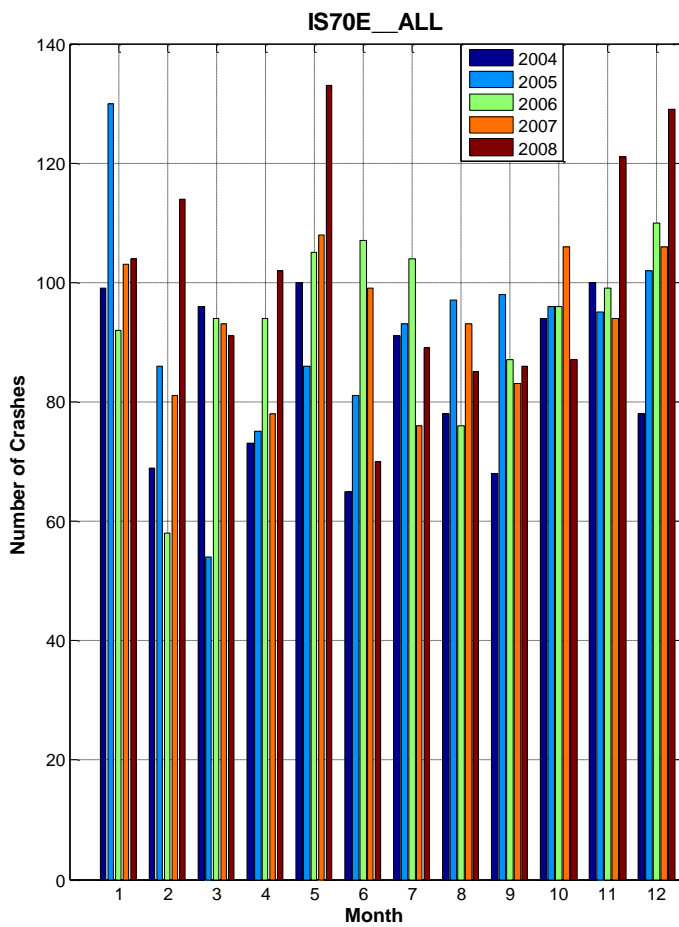


Figure S44: Crashes by Month on I-70 (Both directions, 2004-2008)

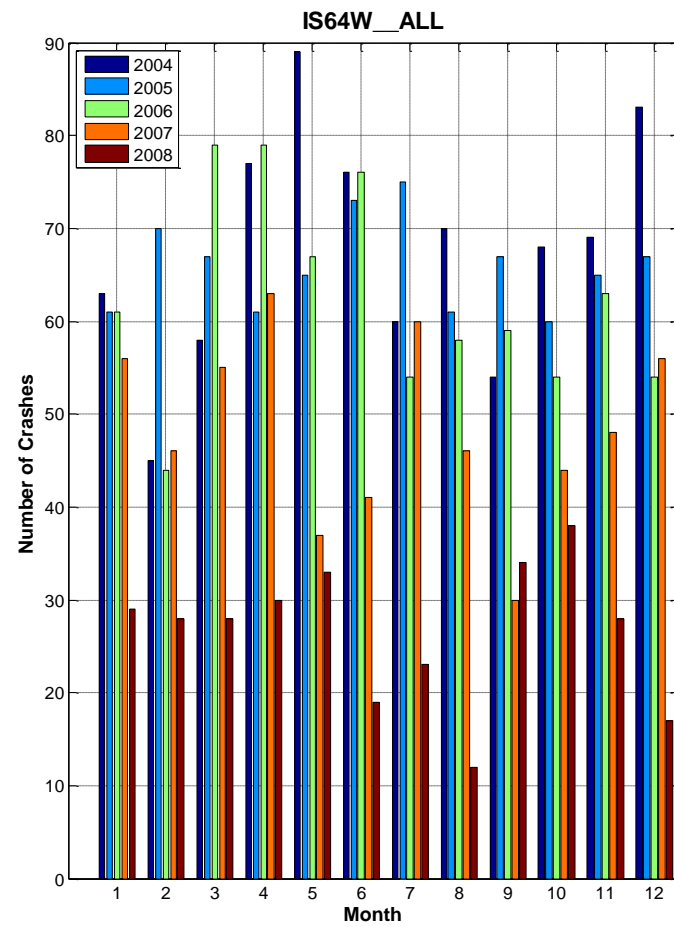
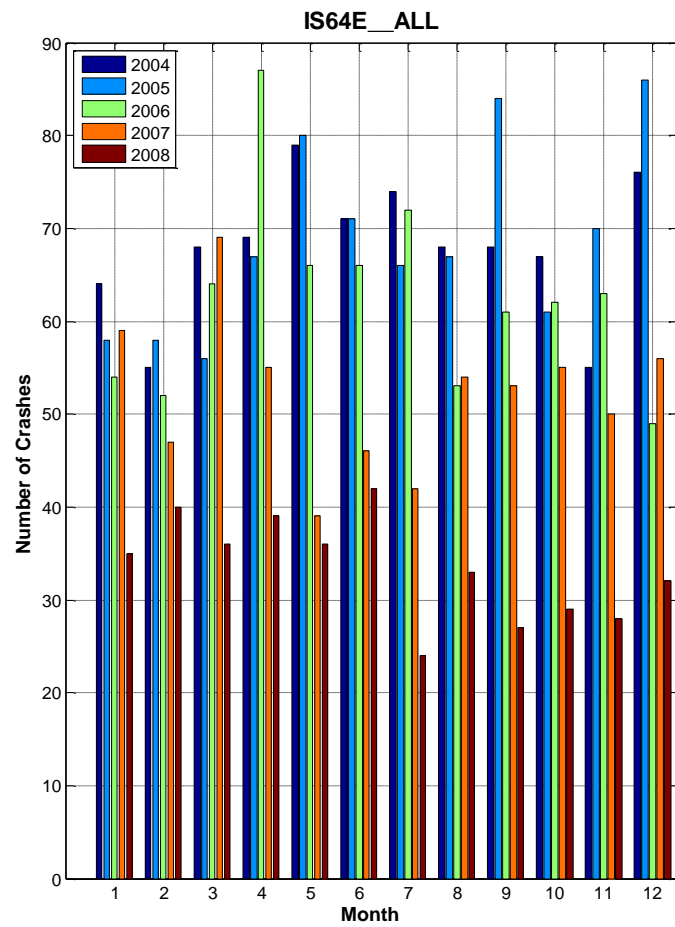


Figure S45: Crashes by Month on I-64 (Both directions, 2004-2008)

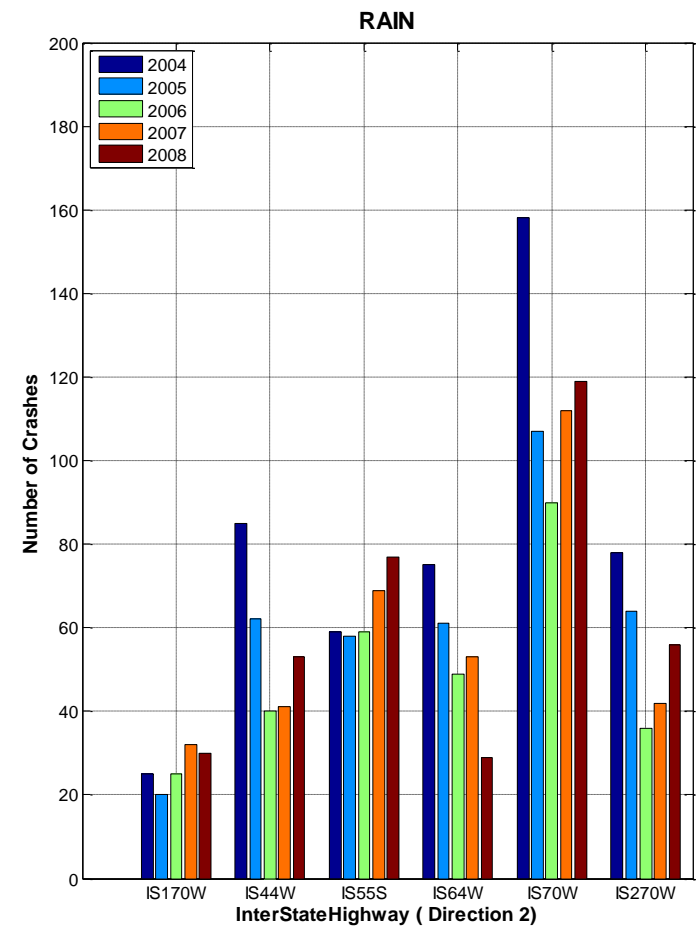
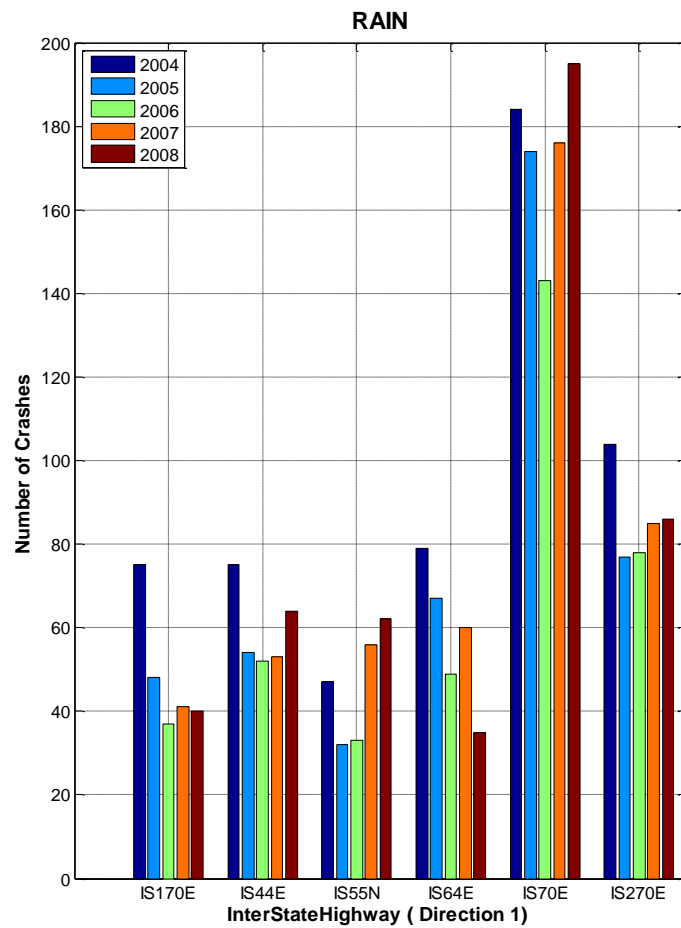


Figure S46: Crashes on Inter-State Highways on Rainy days (Both directions, 2004-2008)

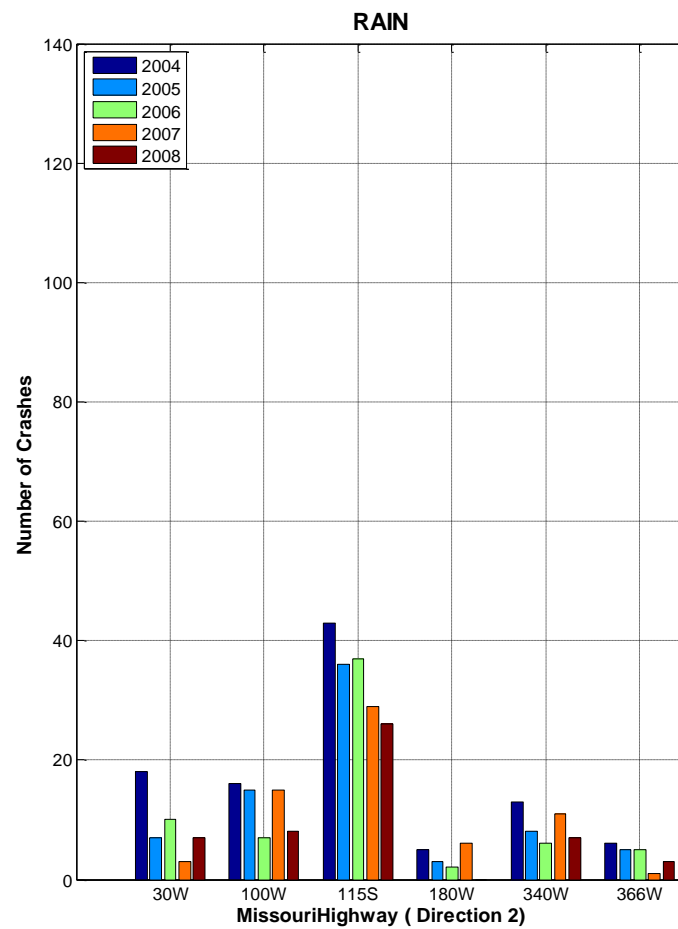
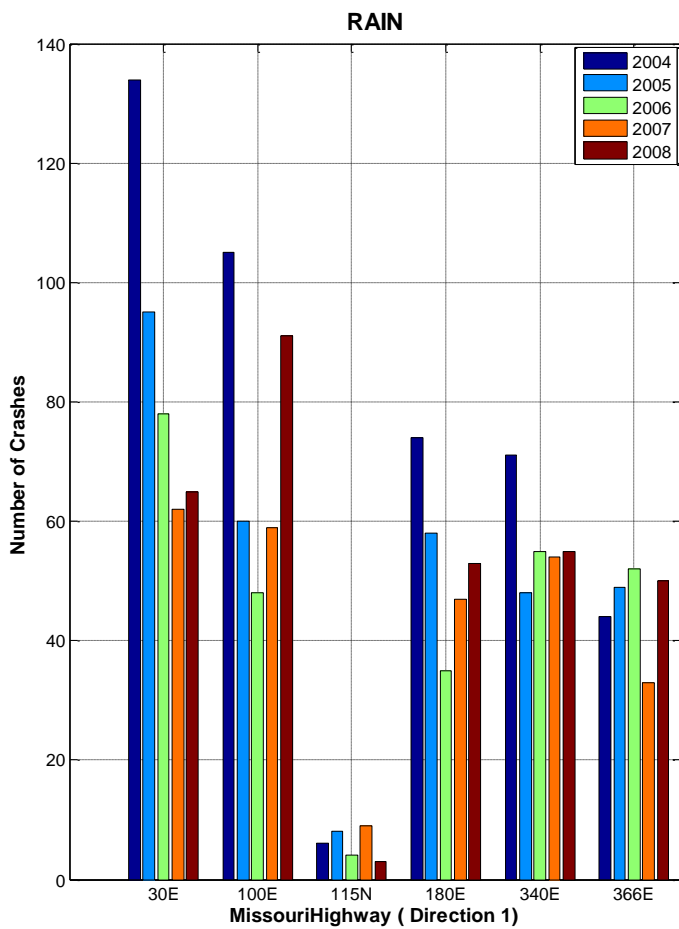


Figure S47: Crashes on Missouri Highways on Rainy days (Both directions, 2004-2008)

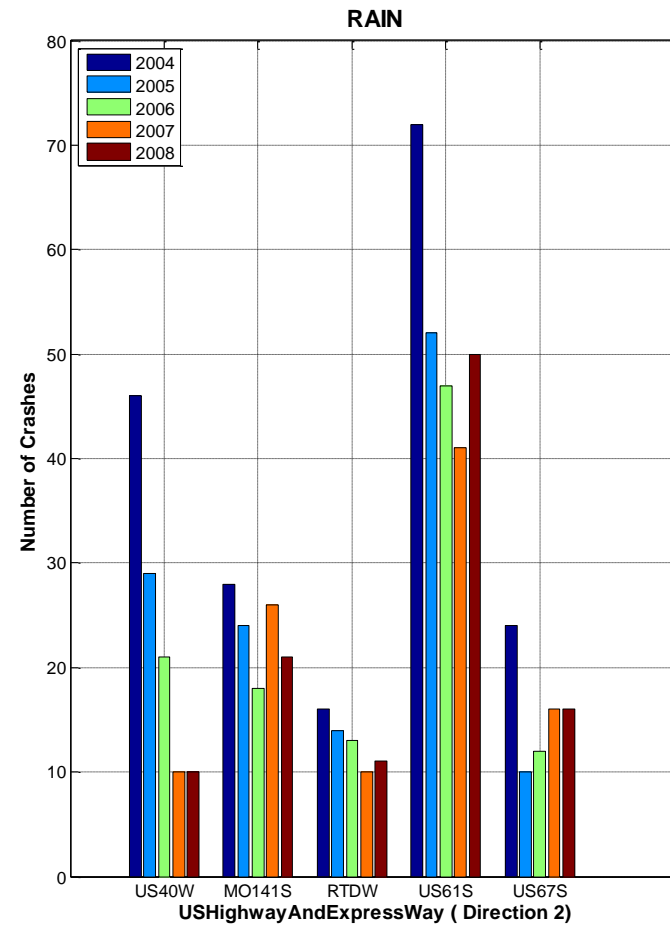
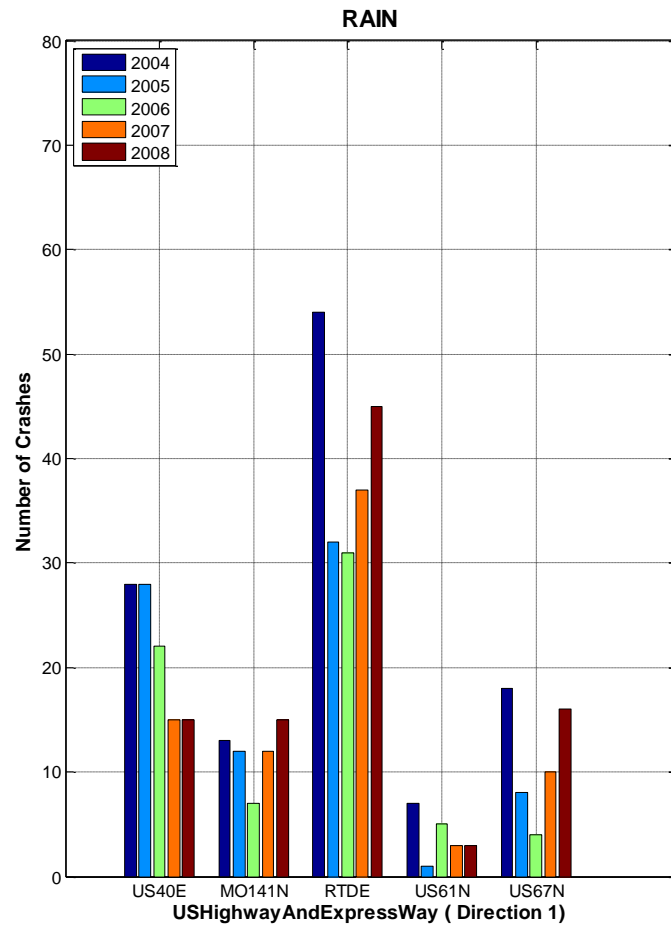


Figure S48: Crashes on US Highway and Expressways on Rainy days (Both directions, 2004-2008)

Appendix 2: Crash Rates (2004-2005)

Table S16: Crash and Severity Rates (I-270 East, 2004)

2004 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
IS 55<->MO 21	E	0.545	1	0.455	74800	41	0	5	36	3.3	4.51
IS 55<->MO 21	E	1	2	1	74800	21	0	3	18	0.77	1.1
IS 55<->MO 21<->MO 30	E	2	3	1	71920	81	0	21	60	3.09	5.49
MO 21<->MO 30<->IS 44	E	3	4	1	71921	91	0	19	72	3.47	5.64
MO 30<->IS 44	E	4	5	1	77195	44	0	9	35	1.56	2.52
MO 30<->IS 44	E	5	6	1	77195	43	0	7	36	1.53	2.27
MO 30<->IS 44<->BIG BEND BLVD	E	6	7	1	73932	106	0	24	82	3.93	6.6
IS 44<->BIG BEND BLVD<->DOUGHERTY FERRY RD	E	7	8	1	77074	48	0	14	34	1.71	3.2
BIG BEND BLVD<->DOUGHERTY FERRY RD<->MO 100	E	8	9	1	81985	42	0	5	37	1.4	1.9
DOUGHERTY FERRY RD<->MO 100	E	9	10	1	78231	15	0	4	11	0.53	0.95
DOUGHERTY FERRY RD<->MO 100<->IS 64	E	10	11	1	82313	85	0	22	63	2.83	5.03
MO 100<->IS 64	E	11	12	1	83747	16	0	6	10	0.52	1.11
MO 100<->IS 64<->RT AB	E	12	13	1	85119	44	0	16	28	1.42	2.96
IS 64<->RT AB<->MO 340	E	13	14	1	89214	48	0	16	32	1.47	2.95
RT AB<->MO 340<->MO 364-RT D	E	14	15	1	93994	86	0	13	73	2.51	3.64
MO 340<->MO 364-RT D	E	15	16	1	94098	46	0	13	33	1.34	2.47
MO 340<->MO 364-RT D<->DORSETT RD	E	16	17	1	93984	122	0	32	90	3.56	6.35
MO 364-RT D<->DORSETT RD<->IS 70	E	17	18	1	93515	83	0	18	65	2.43	4.01
DORSETT RD<->IS 70	E	18	19	1	93753	39	2	7	30	1.14	2.28
DORSETT RD<->IS 70	E	19	20	1	93753	54	0	14	40	1.58	2.81
DORSETT RD<->IS 70<->MO 180	E	20	21	1	82081	42	0	6	36	1.4	2
IS 70<->MO 180<->MO 370	E	21	22	1	58103	47	0	11	36	2.22	3.77
MO 180<->MO 370	E	22	23	1	56638	21	0	9	12	1.02	2.32
MO 180<->MO 370<->MCDONALD BLVD<->US 67	E	23	24	1	71023	1	0	0	1	0.04	0.04
MCDONALD BLVD<->US 67	E	24	25	1	63419	0	0	0	0	0	0
MCDONALD BLVD<->US 67<->IS 170	E	25	26	1	62566	0	0	0	0	0	0
US 67<->IS 170<->GRAHAM RD<->RT N	E	26	27	1	60976	0	0	0	0	0	0
GRAHAM RD<->RT N<->WASHINGTON-ELIZABETH AVE	E	27	28	1	62620	0	0	0	0	0	0
RT N<->WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE	E	28	29	1	61546	0	0	0	0	0	0
WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE<->RT AC	E	29	30	1	60985	0	0	0	0	0	0
WEST FLORISSANT AVE<->RT AC<->OLD HALLS FERRY RD<->MO 367	E	30	31	1	51285	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367	E	31	32	1	53388	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367<->BELLEFONTAINE RD	E	32	33	1	47377	0	0	0	0	0	0
MO 367<->BELLEFONTAINE RD<->LILAC AVE	E	33	34	1	35522	0	0	0	0	0	0
BELLEFONTAINE RD<->LILAC AVE<->LILAC AVE	E	34	35	1	29838	0	0	0	0	0	0
LILAC AVE<->LILAC AVE<->RT H-RIVERVIEW AVE<->	E	35	35.749	0.749	27311	0	0	0	0	0	0
Overall					80563.71776	1266	2	294	970	1.84	3.14

Table S17: Crash and Severity Rates (I-270 East, 2005)

2005 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity	Rate
IS 55<->MO 21	E	0.545	1	0.455	74875	38	1	3	34	3.06		4.52
IS 55<->MO 21	E	1	2	1	74875	18	1	8	9	0.66		1.87
IS 55<->MO 21<->MO 30	E	2	3	1	72016	80	0	12	68	3.05		4.43
MO 21<->MO 30<->IS 44	E	3	4	1	72019	111	1	25	85	4.23		7.44
MO 30<->IS 44	E	4	5	1	77272	64	0	18	46	2.28		4.2
MO 30<->IS 44	E	5	6	1	77272	39	1	12	26	1.39		2.99
MO 30<->IS 44<->BIG BEND BLVD	E	6	7	1	74032	118	0	25	93	4.38		7.16
IS 44<->BIG BEND BLVD<->DOUGHERTY FERRY RD	E	7	8	1	77170	45	0	15	30	1.6		3.2
BIG BEND BLVD<->DOUGHERTY FERRY RD<->MO 100	E	8	9	1	82067	67	0	20	47	2.24		4.25
DOUGHERTY FERRY RD<->MO 100	E	9	10	1	78309	14	0	4	10	0.49		0.91
DOUGHERTY FERRY RD<->MO 100<->IS 64	E	10	11	1	82420	65	0	17	48	2.17		3.87
MO 100<->IS 64	E	11	12	1	83864	25	0	9	16	0.82		1.7
MO 100<->IS 64<->RT AB	E	12	13	1	85238	57	0	15	42	1.84		3.29
IS 64<->RT AB<->MO 340	E	13	14	1	89334	49	0	12	37	1.51		2.61
RT AB<->MO 340<->MO 364-RT D	E	14	15	1	94088	40	0	8	32	1.17		1.87
MO 340<->MO 364-RT D	E	15	16	1	94230	55	0	12	43	1.6		2.65
MO 340<->MO 364-RT D<->DORSETT RD	E	16	17	1	94109	94	1	18	75	2.74		4.58
MO 364-RT D<->DORSETT RD<->IS 70	E	17	18	1	93610	56	0	16	40	1.64		3.05
DORSETT RD<->IS 70	E	18	19	1	93884	53	1	20	32	1.55		3.57
DORSETT RD<->IS 70	E	19	20	1	93884	51	0	14	37	1.49		2.72
DORSETT RD<->IS 70<->MO 180	E	20	21	1	82175	52	0	22	30	1.74		3.94
IS 70<->MO 180<->MO 370	E	21	22	1	58182	38	0	10	28	1.79		3.21
MO 180<->MO 370	E	22	23	1	56717	18	0	9	9	0.87		2.18
MO 180<->MO 370<->MCDONALD BLVD<->US 67	E	23	24	1	71097	2	0	0	2	0.08		0.08
MCDONALD BLVD<->US 67	E	24	25	1	63482	0	0	0	0	0		0
MCDONALD BLVD<->US 67<->IS 170	E	25	26	1	62640	0	0	0	0	0		0
US 67<->IS 170<->GRAHAM RD<->RT N	E	26	27	1	61048	0	0	0	0	0		0
GRAHAM RD<->RT N<->WASHINGTON-ELIZABETH AVE	E	27	28	1	62704	0	0	0	0	0		0
RT N<->WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE	E	28	29	1	61607	0	0	0	0	0		0
WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE<->RT AC	E	29	30	1	61046	0	0	0	0	0		0
WEST FLORISSANT AVE<->RT AC<->OLD HALLS FERRY RD<->MO 367	E	30	31	1	51339	0	0	0	0	0		0
OLD HALLS FERRY RD<->MO 367	E	31	32	1	53463	0	0	0	0	0		0
OLD HALLS FERRY RD<->MO 367<->BELLEFONTAINE RD	E	32	33	1	47896	0	0	0	0	0		0
MO 367<->BELLEFONTAINE RD<->LILAC AVE	E	33	34	1	35948	0	0	0	0	0		0
BELLEFONTAINE RD<->LILAC AVE<->LILAC AVE	E	34	35	1	30183	0	0	0	0	0		0
LILAC AVE<->LILAC AVE<->RT H-RIVERVIEW AVE<->	E	35	35.749	0.749	27636	0	0	0	0	0		0
Overall					80662.20955	1249	6	324	919	1.81		3.3

Table S18: Crash and Severity Rates (I-270 East, 2006)

2006 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
IS 55<->MO 21	E	0.545	1	0.455	77612	42	1	7	34	3.27	5.6
IS 55<->MO 21	E	1	2	1	77612	16	0	1	15	0.57	0.67
IS 55<->MO 21<->MO 30	E	2	3	1	74649	77	0	20	57	2.83	5.04
MO 21<->MO 30<->IS 44	E	3	4	1	74652	110	0	28	82	4.05	7.14
MO 30<->IS 44	E	4	5	1	80097	40	0	11	29	1.37	2.5
MO 30<->IS 44	E	5	6	1	80097	39	0	7	32	1.34	2.06
MO 30<->IS 44<->BIG BEND BLVD	E	6	7	1	74393	108	0	26	82	3.99	6.87
IS 44<->BIG BEND BLVD<->DOUGHERTY FERRY RD	E	7	8	1	77170	53	0	11	42	1.89	3.06
BIG BEND BLVD<->DOUGHERTY FERRY RD<->MO 100	E	8	9	1	82067	54	0	13	41	1.81	3.11
DOUGHERTY FERRY RD<->MO 100	E	9	10	1	78309	12	1	2	9	0.42	0.95
DOUGHERTY FERRY RD<->MO 100<->IS 64	E	10	11	1	82420	74	0	24	50	2.47	4.87
MO 100<->IS 64	E	11	12	1	83864	37	0	14	23	1.21	2.59
MO 100<->IS 64<->RT AB	E	12	13	1	87827	75	0	20	55	2.35	4.22
IS 64<->RT AB<->MO 340	E	13	14	1	98106	61	0	14	47	1.71	2.88
RT AB<->MO 340<->MO 364-RT D	E	14	15	1	103263	71	0	11	60	1.89	2.77
MO 340<->MO 364-RT D	E	15	16	1	94385	61	0	18	43	1.78	3.35
MO 340<->MO 364-RT D<->DORSETT RD	E	16	17	1	91995	103	0	31	72	3.08	5.85
MO 364-RT D<->DORSETT RD<->IS 70	E	17	18	1	81820	62	0	18	44	2.08	3.89
DORSETT RD<->IS 70	E	18	19	1	82059	68	0	16	52	2.28	3.88
DORSETT RD<->IS 70	E	19	20	1	82059	67	0	17	50	2.24	3.95
DORSETT RD<->IS 70<->MO 180	E	20	21	1	87139	51	1	10	40	1.61	2.84
IS 70<->MO 180<->MO 370	E	21	22	1	67793	65	0	16	49	2.63	4.58
MO 180<->MO 370	E	22	23	1	66086	26	0	11	15	1.08	2.45
MO 180<->MO 370<->MCDONALD BLVD<->US 67	E	23	24	1	82842	3	0	1	2	0.1	0.2
MCDONALD BLVD<->US 67	E	24	25	1	73969	0	0	0	0	0	0
MCDONALD BLVD<->US 67<->IS 170	E	25	26	1	68073	0	0	0	0	0	0
US 67<->IS 170<->GRAHAM RD<->RT N	E	26	27	1	61048	0	0	0	0	0	0
GRAHAM RD<->RT N<->WASHINGTON-ELIZABETH AVE	E	27	28	1	62704	0	0	0	0	0	0
RT N<->WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE	E	28	29	1	61607	0	0	0	0	0	0
WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE<->RT AC	E	29	30	1	61046	0	0	0	0	0	0
WEST FLORISSANT AVE<->RT AC<->OLD HALLS FERRY RD<->MO 367	E	30	31	1	51339	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367	E	31	32	1	53463	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367<->BELLEFONTAINE RD	E	32	33	1	48146	0	0	0	0	0	0
MO 367<->BELLEFONTAINE RD<->LILAC AVE	E	33	34	1	36156	0	0	0	0	0	0
BELLEFONTAINE RD<->LILAC AVE<->LILAC AVE	E	34	35	1	30358	0	0	0	0	0	0
LILAC AVE<->LILAC AVE<->RT H-RIVERVIEW AVE<->	E	35	35.749	0.749	34934	0	0	0	0	0	0
Overall					82115.4321	1375	3	347	1025	1.96	3.48

Table S19: Crash and Severity Rates (I-270 East, 2007)

2007 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
IS 55<->MO 21	E	0.545	1	0.455	78388	34	0	7	27	2.62	4.24
IS 55<->MO 21	E	1	2	1	78388	18	0	4	14	0.63	1.05
IS 55<->MO 21<->MO 30	E	2	3	1	75395	66	0	15	51	2.4	4.04
MO 21<->MO 30<->IS 44	E	3	4	1	75398	111	0	24	87	4.04	6.67
MO 30<->IS 44	E	4	5	1	80898	38	0	5	33	1.29	1.8
MO 30<->IS 44	E	5	6	1	80898	36	0	7	29	1.22	1.94
MO 30<->IS 44<->BIG BEND BLVD	E	6	7	1	75138	120	1	30	89	4.39	8.01
IS 44<->BIG BEND BLVD<->DOUGHERTY FERRY RD	E	7	8	1	77941	43	0	7	36	1.52	2.26
BIG BEND BLVD<->DOUGHERTY FERRY RD<->MO 100	E	8	9	1	82888	56	0	9	47	1.86	2.75
DOUGHERTY FERRY RD<->MO 100	E	9	10	1	79092	12	0	2	10	0.42	0.63
DOUGHERTY FERRY RD<->MO 100<->IS 64	E	10	11	1	83244	70	0	14	56	2.31	3.7
MO 100<->IS 64	E	11	12	1	84703	35	0	14	21	1.14	2.5
MO 100<->IS 64<->RT AB	E	12	13	1	88706	72	0	21	51	2.23	4.18
IS 64<->RT AB<->MO 340	E	13	14	1	99087	64	0	13	51	1.77	2.86
RT AB<->MO 340<->MO 364-RT D	E	14	15	1	104296	68	0	14	54	1.79	2.9
MO 340<->MO 364-RT D	E	15	16	1	95329	61	0	9	52	1.76	2.54
MO 340<->MO 364-RT D<->DORSETT RD	E	16	17	1	92915	135	0	39	96	3.99	7.45
MO 364-RT D<->DORSETT RD<->IS 70	E	17	18	1	82638	73	0	19	54	2.43	4.32
DORSETT RD<->IS 70	E	18	19	1	82880	52	0	17	35	1.72	3.41
DORSETT RD<->IS 70	E	19	20	1	82880	59	0	17	42	1.96	3.65
DORSETT RD<->IS 70<->MO 180	E	20	21	1	88011	50	0	17	33	1.56	3.15
IS 70<->MO 180<->MO 370	E	21	22	1	68471	57	0	16	41	2.29	4.21
MO 180<->MO 370	E	22	23	1	66747	22	0	9	13	0.91	2.02
MO 180<->MO 370<->MCDONALD BLVD<->US 67	E	23	24	1	83670	5	0	3	2	0.16	0.46
MCDONALD BLVD<->US 67	E	24	25	1	74709	0	0	0	0	0	0
MCDONALD BLVD<->US 67<->IS 170	E	25	26	1	68753	0	0	0	0	0	0
US 67<->IS 170<->GRAHAM RD<->RT N	E	26	27	1	61658	0	0	0	0	0	0
GRAHAM RD<->RT N<->WASHINGTON-ELIZABETH AVE	E	27	28	1	63331	0	0	0	0	0	0
RT N<->WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE	E	28	29	1	62223	0	0	0	0	0	0
WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE<->RT AC	E	29	30	1	61656	0	0	0	0	0	0
WEST FLORISSANT AVE<->RT AC<->OLD HALLS FERRY RD<->MO 367	E	30	31	1	51852	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367	E	31	32	1	53998	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367<->BELLEFONTAINE RD	E	32	33	1	47920	0	0	0	0	0	0
MO 367<->BELLEFONTAINE RD<->LILAC AVE	E	33	34	1	35929	0	0	0	0	0	0
BELLEFONTAINE RD<->LILAC AVE<->LILAC AVE	E	34	35	1	30167	0	0	0	0	0	0
LILAC AVE<->LILAC AVE<->RT H-RIVERVIEW AVE<->	E	35	35.749	0.749	34714	0	0	0	0	0	0
Overall					82936.66766	1357	1	332	1024	1.92	3.34

Table S20: Crash and Severity Rates (I-270 East, 2008)

2008 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
IS 55<->MO 21	E	0.545	1	0.455	77902	40	0	5	35	3.09	4.25
IS 55<->MO 21	E	1	2	1	77902	11	0	3	8	0.39	0.7
IS 55<->MO 21<->MO 30	E	2	3	1	74927	85	0	18	67	3.11	5.08
MO 21<->MO 30<->IS 44	E	3	4	1	74931	78	0	9	69	2.85	3.84
MO 30<->IS 44	E	4	5	1	80396	33	0	8	25	1.12	1.94
MO 30<->IS 44	E	5	6	1	80396	26	0	8	18	0.89	1.7
MO 30<->IS 44<->BIG BEND BLVD	E	6	7	1	74671	102	0	32	70	3.74	7.26
IS 44<->BIG BEND BLVD<->DOUGHERTY FERRY RD	E	7	8	1	77458	35	0	5	30	1.24	1.77
BIG BEND BLVD<->DOUGHERTY FERRY RD<->MO 100	E	8	9	1	82374	44	0	8	36	1.46	2.26
DOUGHERTY FERRY RD<->MO 100	E	9	10	1	78602	10	0	3	7	0.35	0.66
DOUGHERTY FERRY RD<->MO 100<->IS 64	E	10	11	1	82728	85	0	21	64	2.81	4.9
MO 100<->IS 64	E	11	12	1	84178	38	0	11	27	1.24	2.31
MO 100<->IS 64<->RT AB	E	12	13	1	87379	143	0	38	105	4.48	8.06
IS 64<->RT AB<->MO 340	E	13	14	1	95841	57	0	13	44	1.63	2.74
RT AB<->MO 340<->MO 364-RT D	E	14	15	1	100897	68	0	12	56	1.85	2.82
MO 340<->MO 364-RT D	E	15	16	1	94738	32	0	4	28	0.93	1.27
MO 340<->MO 364-RT D<->DORSETT RD	E	16	17	1	92339	75	0	19	56	2.23	3.92
MO 364-RT D<->DORSETT RD<->IS 70	E	17	18	1	82126	69	0	14	55	2.3	3.7
DORSETT RD<->IS 70	E	18	19	1	82366	43	0	13	30	1.43	2.73
DORSETT RD<->IS 70	E	19	20	1	82366	32	0	9	23	1.06	1.96
DORSETT RD<->IS 70<->MO 180	E	20	21	1	87465	41	0	21	20	1.28	3.26
IS 70<->MO 180<->MO 370	E	21	22	1	68047	54	0	16	38	2.17	4.11
MO 180<->MO 370	E	22	23	1	66333	14	0	10	4	0.58	1.82
MO 180<->MO 370<->MCDONALD BLVD<->US 67	E	23	24	1	83151	0	0	0	0	0	0
MCDONALD BLVD<->US 67	E	24	25	1	74246	0	0	0	0	0	0
MCDONALD BLVD<->US 67<->IS 170	E	25	26	1	68327	0	0	0	0	0	0
US 67<->IS 170<->GRAHAM RD<->RT N	E	26	27	1	61276	0	0	0	0	0	0
GRAHAM RD<->RT N<->WASHINGTON-ELIZABETH AVE	E	27	28	1	62939	0	0	0	0	0	0
RT N<->WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE	E	28	29	1	61838	0	0	0	0	0	0
WASHINGTON-ELIZABETH AVE<->WEST FLORISSANT AVE<->RT AC	E	29	30	1	61274	0	0	0	0	0	0
WEST FLORISSANT AVE<->RT AC<->OLD HALLS FERRY RD<->MO 367	E	30	31	1	51530	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367	E	31	32	1	53663	0	0	0	0	0	0
OLD HALLS FERRY RD<->MO 367<->BELLEFONTAINE RD	E	32	33	1	45788	0	0	0	0	0	0
MO 367<->BELLEFONTAINE RD<->LILAC AVE	E	33	34	1	34178	0	0	0	0	0	0
BELLEFONTAINE RD<->LILAC AVE<->LILAC AVE	E	34	35	1	28698	0	0	0	0	0	0
LILAC AVE<->LILAC AVE<->RT H-RIVERVIEW AVE<->	E	35	35.749	0.749	33023	0	0	0	0	0	0
Overall					82115.58272	1215	0	300	915	1.81	3.14

Table S21: Crash and Severity Rates (I-70 East, 2004)

2004 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
LP 70<->EARTH CITY EXPY	E	230.123	231	0.877	82949	16	0	7	9	0.6	1.39
LP 70<->EARTH CITY EXPY<->IS 270	E	231	232	1	84280	52	0	11	41	1.69	2.76
EARTH CITY EXPY<->IS 270<->MO 180	E	232	233	1	76121	43	1	10	32	1.55	2.95
IS 270<->MO 180	E	233	234	1	55781	16	0	9	7	0.79	2.11
IS 270<->MO 180<->US 67	E	234	235	1	54330	43	0	8	35	2.17	3.38
MO 180<->US 67<->CYPRESS RD<->AIRFLIGHT DR	E	235	236	1	84691	60	0	16	44	1.94	3.49
CYPRESS RD<->AIRFLIGHT DR<->MO 115	E	236	237	1	95060	35	0	6	29	1.01	1.53
AIRFLIGHT DR<->MO 115<->IS 170	E	237	238	1	80552	40	0	11	29	1.36	2.48
MO 115<->IS 170<->NORTH HANLEY RD	E	238	239	1	77791	47	0	12	35	1.66	2.92
IS 170<->NORTH HANLEY RD<->RT N	E	239	240	1	63964	30	0	11	19	1.28	2.7
NORTH HANLEY RD<->RT N<->BERMUDA RD<->RT U	E	240	241	1	63452	24	0	4	20	1.04	1.55
BERMUDA RD<->RT U<->JENNINGS STATION RD	E	241	242	1	65606	101	0	26	75	4.22	7.48
RT U<->JENNINGS STATION RD<->JENNINGS STATION RD	E	242	243	1	63343	49	0	20	29	2.12	4.71
JENNINGS STATION RD<->JENNINGS STATION RD<->GOODFELLOW BLVD<->RIVERVIEW DR<->KINGSHIGHWAY BLVD	E	243	244	1	61492	28	0	5	23	1.25	1.92
RIVERVIEW DR<->KINGSHIGHWAY BLVD<->SHREVE AVE	E	244	245	1	53403	44	0	15	29	2.26	4.57
KINGSHIGHWAY BLVD<->SHREVE AVE<->WEST FLORISSANT AVE<->BROADWAY	E	245	246	1	49881	44	0	13	31	2.42	4.56
WEST FLORISSANT AVE<->BROADWAY<->ADELAIDE AVE<->GRAND AVE	E	246	247	1	54330	72	1	28	43	3.63	8.32
ADELAIDE AVE<->GRAND AVE<->MO 115-SALISBURY ST	E	247	248	1	58358	47	0	12	35	2.21	3.9
GRAND AVE<->MO 115-SALISBURY ST<->10TH-11TH STS	E	248	249	1	46618	49	0	11	38	2.88	4.82
MO 115-SALISBURY ST<->10TH-11TH STS<->6TH-7TH STS<->MO 799	E	249	250	1	39924	40	0	14	26	2.74	5.63
6TH-7TH STS<->MO 799<->MEMORIAL-PINE<->MEMORIAL-WALNUT<->	E	250	251	1	41316	52	0	17	35	3.45	6.83
MEMORIAL-WALNUT<->	E	251	251.3	0.3	44066	79	0	19	60	16.37	28.19
Overall					64044	1011	2	285	724	2.04	3.81

Table S22: Crash and Severity Rates (I-70 East, 2005)

2005 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
LP 70<->EARTH CITY EXPY	E	230.123	231	0.877	83032	11	0	6	5	0.41	1.09
LP 70<->EARTH CITY EXPY<->IS 270	E	231	232	1	82774	54	2	11	41	1.79	3.48
EARTH CITY EXPY<->IS 270<->MO 180	E	232	233	1	73909	53	0	14	39	1.97	3.53
IS 270<->MO 180	E	233	234	1	55859	26	0	13	13	1.28	3.2
IS 270<->MO 180<->US 67	E	234	235	1	54389	36	0	9	27	1.82	3.18
MO 180<->US 67<->CYPRESS RD<->AIRFLIGHT DR	E	235	236	1	84793	66	0	22	44	2.14	4.28
CYPRESS RD<->AIRFLIGHT DR<->MO 115	E	236	237	1	95155	42	0	15	27	1.21	2.51
AIRFLIGHT DR<->MO 115<->IS 170	E	237	238	1	80632	55	0	14	41	1.87	3.3
MO 115<->IS 170<->NORTH HANLEY RD	E	238	239	1	77874	58	0	11	47	2.05	3.21
IS 170<->NORTH HANLEY RD<->RT N	E	239	240	1	64050	25	0	6	19	1.07	1.84
NORTH HANLEY RD<->RT N<->BERMUDA RD<->RT U	E	240	241	1	65330	30	0	7	23	1.26	2.14
BERMUDA RD<->RT U<->JENNINGS STATION RD	E	241	242	1	68893	82	0	24	58	3.27	6.14
RT U<->JENNINGS STATION RD<->JENNINGS STATION RD	E	242	243	1	66533	34	0	8	26	1.4	2.39
JENNINGS STATION RD<->JENNINGS STATION RD<->GOODFELLOW BLVD<->RIVERVIEW DR<->KINGSHIGHWAY BLV E	E	243	244	1	62914	42	0	24	18	1.83	4.98
RIVERVIEW DR<->KINGSHIGHWAY BLVD<->SHREVE AVE	E	244	245	1	53456	55	0	13	42	2.83	4.83
KINGSHIGHWAY BLVD<->SHREVE AVE<->WEST FLORISSANT AVE<->BROADWAY	E	245	246	1	49944	63	0	20	43	3.47	6.77
WEST FLORISSANT AVE<->BROADWAY<->ADELAIDE AVE<->GRAND AVE	E	246	247	1	54384	67	0	19	48	3.38	6.26
ADELAIDE AVE<->GRAND AVE<->MO 115-SALISBURY ST	E	247	248	1	58417	58	0	25	33	2.73	6.25
GRAND AVE<->MO 115-SALISBURY ST<->10TH-11TH STS	E	248	249	1	46665	59	1	14	44	3.47	6.48
MO 115-SALISBURY ST<->10TH-11TH STS<->6TH-7TH STS<->MO 799	E	249	250	1	39969	67	0	26	41	4.61	9.97
6TH-7TH STS<->MO 799<->MEMORIAL-PINE<->MEMORIAL-WALNUT<->	E	250	251	1	41360	44	0	15	29	2.92	5.91
MEMORIAL-WALNUT<->	E	251	251.3	0.3	44110	66	0	17	49	13.7	24.29
Overall					64379	1093	3	333	757	2.2	4.27

Table S23: Crash and Severity Rates (I-70 East, 2006)

2006 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
LP 70<->EARTH CITY EXPY	E	230.123	231	0.877	83032	21	0	9	12	0.79	1.81
LP 70<->EARTH CITY EXPY<->IS 270	E	231	232	1	83359	60	0	8	52	1.98	2.77
EARTH CITY EXPY<->IS 270<->MO 180	E	232	233	1	76092	59	0	14	45	2.13	3.65
IS 270<->MO 180	E	233	234	1	60013	28	0	11	17	1.28	2.79
IS 270<->MO 180<->US 67	E	234	235	1	58434	39	0	12	27	1.83	3.53
MO 180<->US 67<->CYPRESS RD<->AIRFLIGHT DR	E	235	236	1	67382	58	0	14	44	2.36	4.08
CYPRESS RD<->AIRFLIGHT DR<->MO 115	E	236	237	1	73012	46	0	8	38	1.73	2.63
AIRFLIGHT DR<->MO 115<->IS 170	E	237	238	1	61869	60	0	22	38	2.66	5.59
MO 115<->IS 170<->NORTH HANLEY RD	E	238	239	1	63476	60	0	23	37	2.6	5.58
IS 170<->NORTH HANLEY RD<->RT N	E	239	240	1	67349	30	0	9	21	1.22	2.33
NORTH HANLEY RD<->RT N<->BERMUDA RD<->RT U	E	240	241	1	65741	30	0	7	23	1.25	2.13
BERMUDA RD<->RT U<->JENNINGS STATION RD	E	241	242	1	67207	67	0	9	58	2.74	3.84
RT U<->JENNINGS STATION RD<->JENNINGS STATION RD	E	242	243	1	64905	49	0	11	38	2.07	3.47
JENNINGS STATION RD<->JENNINGS STATION RD<->GOODFELLOW BLVD<->RIVERVIEW DR<->KINGSHIGHWAY BLV	E	243	244	1	62200	35	0	10	25	1.55	2.87
RIVERVIEW DR<->KINGSHIGHWAY BLVD<->SHREVE AVE	E	244	245	1	53456	36	0	9	27	1.85	3.24
KINGSHIGHWAY BLVD<->SHREVE AVE<->WEST FLORISSANT AVE<->BROADWAY	E	245	246	1	49944	63	0	17	46	3.47	6.27
WEST FLORISSANT AVE<->BROADWAY<->ADELAIDE AVE<->GRAND AVE	E	246	247	1	54384	46	0	9	37	2.32	3.69
ADELAIDE AVE<->GRAND AVE<->MO 115-SALISBURY ST	E	247	248	1	58417	53	0	19	34	2.49	5.17
GRAND AVE<->MO 115-SALISBURY ST<->10TH-11TH STS	E	248	249	1	46665	54	0	19	35	3.18	6.53
MO 115-SALISBURY ST<->10TH-11TH STS<->6TH-7TH STS<->MO 799	E	249	250	1	39969	59	1	20	38	4.06	8.8
6TH-7TH STS<->MO 799<->MEMORIAL-PINE<->MEMORIAL-WALNUT<->	E	250	251	1	41360	71	0	23	48	4.72	9.3
MEMORIAL-WALNUT<->	E	251	251.3	0.3	44110	98	1	29	68	20.35	40.28
Overall					61448	1122	2	312	808	2.37	4.38

Table S24: Crash and Severity Rates (I-70 East, 2007)

2007 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	ADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
LP 70<->EARTH CITY EXPY	E	230.123	231	0.877	83862	7	0	3	4	0.26	0.6
LP 70<->EARTH CITY EXPY<->IS 270	E	231	232	1	83123	43	0	9	34	1.42	2.31
EARTH CITY EXPY<->IS 270<->MO 180	E	232	233	1	75309	63	0	16	47	2.3	4.05
IS 270<->MO 180	E	233	234	1	60613	21	0	4	17	0.95	1.5
IS 270<->MO 180<->US 67	E	234	235	1	59019	39	0	10	29	1.82	3.21
MO 180<->US 67<->CYPRESS RD<->AIRFLIGHT DR	E	235	236	1	68056	65	0	17	48	2.62	4.68
CYPRESS RD<->AIRFLIGHT DR<->MO 115	E	236	237	1	73742	42	0	11	31	1.56	2.79
AIRFLIGHT DR<->MO 115<->IS 170	E	237	238	1	62488	41	0	12	29	1.8	3.39
MO 115<->IS 170<->NORTH HANLEY RD	E	238	239	1	64111	68	0	18	50	2.91	5.23
IS 170<->NORTH HANLEY RD<->RT N	E	239	240	1	68022	35	0	5	30	1.41	2.02
NORTH HANLEY RD<->RT N<->BERMUDA RD<->RT U	E	240	241	1	67071	33	0	12	21	1.35	2.83
BERMUDA RD<->RT U<->JENNINGS STATION RD	E	241	242	1	69072	91	1	23	67	3.62	6.72
RT U<->JENNINGS STATION RD<->JENNINGS STATION RD	E	242	243	1	66706	49	0	13	36	2.02	3.62
JENNINGS STATION RD<->JENNINGS STATION RD<->GOODFELLOW BLVD<->RIVERVIEW DR<->KINGSHIGHWAY BLV	E	243	244	1	63327	26	0	7	19	1.13	2.04
RIVERVIEW DR<->KINGSHIGHWAY BLVD<->SHREVE AVE	E	244	245	1	53991	55	1	15	39	2.8	5.55
KINGSHIGHWAY BLVD<->SHREVE AVE<->WEST FLORISSANT AVE<->BROADWAY	E	245	246	1	50443	56	0	17	39	3.05	5.83
WEST FLORISSANT AVE<->BROADWAY<->ADELAIDE AVE<->GRAND AVE	E	246	247	1	54928	62	0	15	47	3.1	5.35
ADELAIDE AVE<->GRAND AVE<->MO 115-SALISBURY ST	E	247	248	1	59001	48	0	19	29	2.24	4.89
GRAND AVE<->MO 115-SALISBURY ST<->10TH-11TH STS	E	248	249	1	47132	51	1	12	38	2.97	5.6
MO 115-SALISBURY ST<->10TH-11TH STS<->6TH-7TH STS<->MO 799	E	249	250	1	40368	85	0	27	58	5.78	11.3
6TH-7TH STS<->MO 799<->MEMORIAL-PINE<->MEMORIAL-WALNUT<->	E	250	251	1	41773	68	0	18	50	4.47	8.02
MEMORIAL-WALNUT<->	E	251	251.3	0.3	44551	72	0	20	52	14.8	27.13
Overall					62105	1120	3	303	814	2.34	4.29

Table S25: Crash and Severity Rates (I-70 East, 2008)

2008 segment Name	Direction	Cont. Log (start)	Cont. Log (end)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
LP 70<->EARTH CITY EXPY	E	230.123	231	0.877	83342	10	0	0	10	0.37	0.37
LP 70<->EARTH CITY EXPY<->IS 270	E	231	232	1	83840	60	1	12	47	1.96	3.43
EARTH CITY EXPY<->IS 270<->MO 180	E	232	233	1	76620	45	0	14	31	1.61	3.11
IS 270<->MO 180	E	233	234	1	60237	14	0	5	9	0.64	1.32
IS 270<->MO 180<->US 67	E	234	235	1	58653	57	0	18	39	2.66	5.18
MO 180<->US 67<->CYPRESS RD<->AIRFLIGHT DR	E	235	236	1	67634	75	0	28	47	3.04	6.44
CYPRESS RD<->AIRFLIGHT DR<->MO 115	E	236	237	1	73285	63	0	17	46	2.36	4.26
AIRFLIGHT DR<->MO 115<->IS 170	E	237	238	1	62101	48	0	16	32	2.12	4.24
MO 115<->IS 170<->NORTH HANLEY RD	E	238	239	1	63713	71	1	13	57	3.05	5.12
IS 170<->NORTH HANLEY RD<->RT N	E	239	240	1	67600	43	0	13	30	1.74	3.32
NORTH HANLEY RD<->RT N<->BERMUDA RD<->RT U	E	240	241	1	67787	39	0	12	27	1.58	3.03
BERMUDA RD<->RT U<->JENNINGS STATION RD	E	241	242	1	70648	102	0	32	70	3.96	7.68
RT U<->JENNINGS STATION RD<->JENNINGS STATION RD	E	242	243	1	68228	58	2	16	40	2.33	4.98
JENNINGS STATION RD<->JENNINGS STATION RD<->GOODFELLOW BLVD<->RIVERVIEW DR<->KINGSHIGHWAY BLVD	E	243	244	1	63783	35	1	11	23	1.5	3.31
RIVERVIEW DR<->KINGSHIGHWAY BLVD<->SHREVE AVE	E	244	245	1	53656	57	0	12	45	2.91	4.75
KINGSHIGHWAY BLVD<->SHREVE AVE<->WEST FLORISSANT AVE<->BROADWAY	E	245	246	1	50130	58	0	16	42	3.17	5.79
WEST FLORISSANT AVE<->BROADWAY<->ADELAIDE AVE<->GRAND AVE	E	246	247	1	54588	74	0	16	58	3.71	6.12
ADELAIDE AVE<->GRAND AVE<->MO 115-SALISBURY ST	E	247	248	1	58635	47	0	8	39	2.2	3.32
GRAND AVE<->MO 115-SALISBURY ST<->10TH-11TH STS	E	248	249	1	46839	51	1	16	34	2.98	6.32
MO 115-SALISBURY ST<->10TH-11TH STS<->6TH-7TH STS<->MO 799	E	249	250	1	40118	78	0	26	52	5.33	10.65
6TH-7TH STS<->MO 799<->MEMORIAL-PINE<->MEMORIAL-WALNUT<->	E	250	251	1	41514	66	0	21	45	4.36	8.51
MEMORIAL-WALNUT<->	E	251	251.3	0.3	44275	60	0	16	44	12.38	22.28
Overall					62142	1211	6	338	867	2.52	4.74

Table S26: Crash and Severity Rates (Mo100 East, 2004)

2004 segment N	Direction	Cont. Log (	Cont. Log (	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Ra
RT OO<->N U		88.811	89	0.189	8079	0	0	0	0	0	0
RT OO<->N U		89	90	1	8079	0	0	0	0	0	0
RT OO<->N U		90	91	1	8079	0	0	0	0	0	0
RT OO<->N U		91	92	1	8929	0	0	0	0	0	0
MELROSE F U		92	93	1	12034	0	0	0	0	0	0
BEGIN DIV U		93	94	1	9230	0	0	0	0	0	0
RT T<->W L E		94	95	1	8601	0	0	0	0	0	0
RT T<->W L E		95	96	1	7110	0	0	0	0	0	0
MO 109<-> E		96	97	1	9412	0	0	0	0	0	0
MO 109<-> E		97	98	1	14255	0	0	0	0	0	0
WESTGLEN E		98	99	1	30386	0	0	0	0	0	0
OLD STATE U		99	100	1	47483	0	0	0	0	0	0
MO 340<-> U		100	101	1	47966	0	0	0	0	0	0
MO 340<-> U		101	102	1	47966	0	0	0	0	0	0
MO 340<-> U		102	103	1	50206	0	0	0	0	0	0
BAXTER RD U		103	104	1	29527	79	0	18	61	733.02	1234.07
MO 141<-> E		104	105	1	21942	96	0	24	72	1198.68	2097.68
MO 141<-> E		105	106	1	29569	50	0	14	36	463.28	852.43
BEGIN DIV E		106	107	1	20898	127	0	28	99	1664.97	2766.21
RT JJ<->GE' E		107	108	1	13670	57	0	12	45	1142.39	1863.9
RT JJ<->GE' E		108	109	1	20123	96	0	25	71	1307.03	2328.15
GEYER RD< U		109	110	1	26811	94	0	20	74	960.55	1573.67
US 61-67<- U		110	111	1	26698	103	0	13	90	1056.98	1457.19
US 61-67<- U		111	112	1	23181	55	0	5	50	650.04	827.32
MCKNIGHT U		112	113	1	19492	77	0	15	62	1082.28	1714.79
MCKNIGHT U		113	114	1	18482	65	0	15	50	963.54	1630.61
BIG BEND - U		114	115	1	12042	43	0	11	32	978.31	1729.11
ST LOUIS CI U		115	116	1	9533	27	0	7	20	775.96	1379.49
ST LOUIS CI U		116	117	1	9533	16	0	1	15	459.83	546.05
ST LOUIS CI U		117	118	1	9563	88	0	19	69	2521.13	4154.14
VANDEVEN U		118	119	1	9585	0	0	0	0	0	0
VANDEVEN U		119	120	1	9585	0	0	0	0	0	0
VANDEVEN U		120	121	1	8464	0	0	0	0	0	0
CHOUTEAL U		121	121.431	0.431	6642	0	0	0	0	0	0
Overall					19404	1073	0	227	846	1009.99	1651

Table S27: Crash and Severity Rates (Mo100 East, 2005)

2005 segment N:Direction	Cont. Log (	Cont. Log (r	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Ra
RT OO<->N U	88.811	89	0.189	8055	0	0	0	0	0	0
RT OO<->N U	89	90	1	8055	0	0	0	0	0	0
RT OO<->N U	90	91	1	8055	0	0	0	0	0	0
RT OO<->N U	91	92	1	8903	0	0	0	0	0	0
MELROSE F U	92	93	1	12001	0	0	0	0	0	0
BEGIN DIV U	93	94	1	9202	0	0	0	0	0	0
RT T<->W L E	94	95	1	8575	0	0	0	0	0	0
RT T<->W L E	95	96	1	6962	0	0	0	0	0	0
MO 109<-> E	96	97	1	9211	0	0	0	0	0	0
MO 109<-> E	97	98	1	13950	0	0	0	0	0	0
WESTGLEN E	98	99	1	29745	0	0	0	0	0	0
OLD STATE U	99	100	1	41207	0	0	0	0	0	0
MO 340<-> U	100	101	1	46958	0	0	0	0	0	0
MO 340<-> U	101	102	1	46958	0	0	0	0	0	0
MO 340<-> U	102	103	1	50599	0	0	0	0	0	0
BAXTER RD U	103	104	1	28902	74	0	16	58	703.4	1159.66
MO 141<-> E	104	105	1	21481	99	0	17	82	1266.13	1918.38
MO 141<-> E	105	106	1	28943	35	1	9	25	332.22	673.93
BEGIN DIV E	106	107	1	20456	102	0	20	82	1369.87	2175.67
RT JJ<->GE'E	107	108	1	13383	71	0	12	59	1457.48	2196.49
RT JJ<->GE'E	108	109	1	19701	89	0	28	61	1241.08	2412.44
GEYER RD< U	109	110	1	26248	91	0	13	78	952.45	1360.65
US 61-67<- U	110	111	1	26137	58	0	13	45	609.64	1019.56
US 61-67<- U	111	112	1	22691	48	0	10	38	581.15	944.36
MCKNIGHT U	112	113	1	19075	71	0	20	51	1022.57	1886.71
MCKNIGHT U	113	114	1	18088	58	0	13	45	880.92	1473.26
BIG BEND - U	114	115	1	11790	46	0	6	40	1071.87	1491.3
ST LOUIS CI U	115	116	1	9333	15	0	2	13	441.54	618.15
ST LOUIS CI U	116	117	1	9333	17	0	1	16	500.41	588.72
ST LOUIS CI U	117	118	1	9362	96	0	24	72	2817.09	4929.91
VANDEVEN U	118	119	1	9384	0	0	0	0	0	0
VANDEVEN U	119	120	1	9384	0	0	0	0	0	0
VANDEVEN U	120	121	1	8286	0	0	0	0	0	0
CHOUTEAU U	121	121.431	0.431	6502	0	0	0	0	0	0
Overall				18995	970	1	204	765	935.28	1534.06

Table S28: Crash and Severity Rates (Mo100 East, 2006)

2006 segment N.Direction	Cont. Log (L)	Cont. Log (L)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
RT OO<->N U	88.811	89	0.189	9738	0	0	0	0	0	0
RT OO<->N U	89	90	1	9738	0	0	0	0	0	0
RT OO<->N U	90	91	1	9738	0	0	0	0	0	0
RT OO<->N U	91	92	1	10051	0	0	0	0	0	0
MELROSE F U	92	93	1	11192	0	0	0	0	0	0
BEGIN DIV U	93	94	1	8657	0	0	0	0	0	0
RT T<->W L E	94	95	1	8090	0	0	0	0	0	0
RT T<->W L E	95	96	1	7467	0	0	0	0	0	0
MO 109<-> E	96	97	1	9901	0	0	0	0	0	0
MO 109<-> E	97	98	1	13952	0	0	0	0	0	0
WESTGLEN E	98	99	1	29502	0	0	0	0	0	0
OLD STATE U	99	100	1	38581	0	0	0	0	0	0
MO 340<-> U	100	101	1	38517	0	0	0	0	0	0
MO 340<-> U	101	102	1	38517	0	0	0	0	0	0
MO 340<-> U	102	103	1	41635	0	0	0	0	0	0
BAXTER RD U	103	104	1	26764	83	0	16	67	851.97	1344.68
MO 141<-> E	104	105	1	20624	106	0	17	89	1411.99	2091.34
MO 141<-> E	105	106	1	26954	42	0	9	33	428.08	703.27
BEGIN DIV E	106	107	1	19802	103	0	21	82	1428.98	2303.02
RT JJ<->GE' E	107	108	1	13156	51	0	5	46	1064.99	1378.22
RT JJ<->GE' E	108	109	1	20530	73	0	10	63	976.86	1378.31
GEYER RD< U	109	110	1	26839	65	0	14	51	665.34	1095.26
US 61-67<- U	110	111	1	26602	60	0	13	47	619.63	1022.4
US 61-67<- U	111	112	1	23153	43	0	11	32	510.22	901.79
MCKNIGHT U	112	113	1	19534	60	0	12	48	843.84	1350.14
MCKNIGHT U	113	114	1	18528	73	0	14	59	1082.41	1705.17
BIG BEND - U	114	115	1	12257	43	0	11	32	963.79	1703.44
ST LOUIS C U	115	116	1	9896	27	0	10	17	749.55	1582.39
ST LOUIS C U	116	117	1	9896	14	0	6	8	388.66	888.36
ST LOUIS C U	117	118	1	9738	77	0	15	62	2172.3	3441.82
VANDEVEN U	118	119	1	9619	0	0	0	0	0	0
VANDEVEN U	119	120	1	9619	0	0	0	0	0	0
VANDEVEN U	120	121	1	8497	0	0	0	0	0	0
CHOUTEAL U	121	121.431	0.431	3398	0	0	0	0	0	0
Overall				18952	920	0	184	736	889.1	1422.56

Table S29: Crash and Severity Rates (Mo100 East, 2007)

2007 segment N: Direction	Cont. Log (L)	Cont. Log (L)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
RT OO<->M U	88.811	89	0.189	9738	0	0	0	0	0	0
RT OO<->M U	89	90	1	9738	0	0	0	0	0	0
RT OO<->M U	90	91	1	9738	0	0	0	0	0	0
RT OO<->M U	91	92	1	10051	0	0	0	0	0	0
MELROSE F U	92	93	1	11192	0	0	0	0	0	0
BEGIN DIV U	93	94	1	8657	0	0	0	0	0	0
RT T<->W L E	94	95	1	8090	0	0	0	0	0	0
RT T<->W L E	95	96	1	7467	0	0	0	0	0	0
MO 109<-> E	96	97	1	9901	0	0	0	0	0	0
MO 109<-> E	97	98	1	13952	0	0	0	0	0	0
WESTGLEN E	98	99	1	29502	0	0	0	0	0	0
OLD STATE U	99	100	1	38581	0	0	0	0	0	0
MO 340<-> U	100	101	1	38517	0	0	0	0	0	0
MO 340<-> U	101	102	1	38517	0	0	0	0	0	0
MO 340<-> U	102	103	1	41635	0	0	0	0	0	0
BAXTER RD U	103	104	1	26764	100	0	26	74	1026.47	1827.12
MO 141<-> E	104	105	1	20624	118	0	8	110	1571.84	1891.53
MO 141<-> E	105	106	1	26954	43	0	11	32	438.27	774.62
BEGIN DIV E	106	107	1	19802	123	0	26	97	1706.45	2788.6
RT JJ<->GE E	107	108	1	13156	50	0	10	40	1044.11	1670.57
RT JJ<->GE E	108	109	1	20530	80	0	17	63	1070.53	1753
GEYER RD< U	109	110	1	26839	74	0	20	54	757.47	1371.63
US 61-67<- U	110	111	1	26602	67	0	10	57	691.93	1001.74
US 61-67<- U	111	112	1	23153	42	0	7	35	498.36	747.54
MCKNIGHT U	112	113	1	19534	58	1	8	49	815.71	1279.82
MCKNIGHT U	113	114	1	18528	76	0	17	59	1126.9	1883.1
BIG BEND - U	114	115	1	12257	63	0	14	49	1412.07	2353.44
ST LOUIS CI U	115	116	1	9896	24	0	6	18	666.27	1165.97
ST LOUIS CI U	116	117	1	9896	7	0	0	7	194.33	194.33
ST LOUIS CI U	117	118	1	9738	68	0	13	55	1918.39	3018.65
VANDEVEN U	118	119	1	9619	0	0	0	0	0	0
VANDEVEN U	119	120	1	9619	0	0	0	0	0	0
VANDEVEN U	120	121	1	8497	0	0	0	0	0	0
CHOUTEAU U	121	121.431	0.431	3398	0	0	0	0	0	0
Overall				18952	993	1	193	799	959.65	1527.9

Table S30: Crash and Severity Rates (Mo100 East, 2008)

2008 segment N. Direction	Cont. Log (mi)	Cont. Log (mi)	Length (mi)	AADT	Crashes	Fatality	Injury	Property	Crash Rate	Severity Rate
RT OO<->M U	88.811	89	0.189	9446	0	0	0	0	0	0
RT OO<->M U	89	90	1	9446	0	0	0	0	0	0
RT OO<->M U	90	91	1	9446	0	0	0	0	0	0
RT OO<->M U	91	92	1	9763	0	0	0	0	0	0
MELROSE F U	92	93	1	10922	0	0	0	0	0	0
BEGIN DIV U	93	94	1	8449	0	0	0	0	0	0
RT T<->W L E	94	95	1	7895	0	0	0	0	0	0
RT T<->W L E	95	96	1	7287	0	0	0	0	0	0
MO 109<-> E	96	97	1	9662	0	0	0	0	0	0
MO 109<-> E	97	98	1	13616	0	0	0	0	0	0
WESTGLEN E	98	99	1	28791	0	0	0	0	0	0
OLD STATE U	99	100	1	37652	0	0	0	0	0	0
MO 340<-> U	100	101	1	37589	0	0	0	0	0	0
MO 340<-> U	101	102	1	37589	0	0	0	0	0	0
MO 340<-> U	102	103	1	40632	0	0	0	0	0	0
BAXTER RD U	103	104	1	26119	84	0	23	61	881.11	1604.88
MO 141<-> E	104	105	1	20127	108	0	20	88	1470.12	2286.85
MO 141<-> E	105	106	1	26305	37	0	6	31	385.36	572.84
BEGIN DIV E	106	107	1	19325	140	0	26	114	1984.8	3090.61
RT JJ<->GE E	107	108	1	12839	74	0	18	56	1579.09	2731.4
RT JJ<->GE E	108	109	1	20036	125	0	28	97	1709.25	2857.87
GEYER RD< U	109	110	1	26192	127	0	23	104	1328.44	2050.19
US 61-67<- U	110	111	1	25960	66	0	8	58	696.54	949.83
US 61-67<- U	111	112	1	22594	47	0	8	39	569.92	860.94
MCKNIGHT U	112	113	1	19063	75	0	8	67	1077.9	1422.82
MCKNIGHT U	113	114	1	18081	95	0	13	82	1439.49	2030.44
BIG BEND - U	114	115	1	11962	29	0	8	21	664.2	1213.89
ST LOUIS C U	115	116	1	9658	12	0	5	7	340.41	765.92
ST LOUIS C U	116	117	1	9658	4	0	2	2	113.47	283.67
ST LOUIS C U	117	118	1	9504	37	0	7	30	1066.6	1671.97
VANDEVEN U	118	119	1	9387	0	0	0	0	0	0
VANDEVEN U	119	120	1	9387	0	0	0	0	0	0
VANDEVEN U	120	121	1	8292	0	0	0	0	0	0
CHOUTEAU U	121	121.431	0.431	3317	0	0	0	0	0	0
Overall				18495	1060	0	203	857	1046.82	1648.24

APPENDIX C

Economic Data

Economics Appendix – Taxable Sales by Major Industry and Region

Figure 1: Taxable Sales Growth Index for St. Louis City and St. Louis County

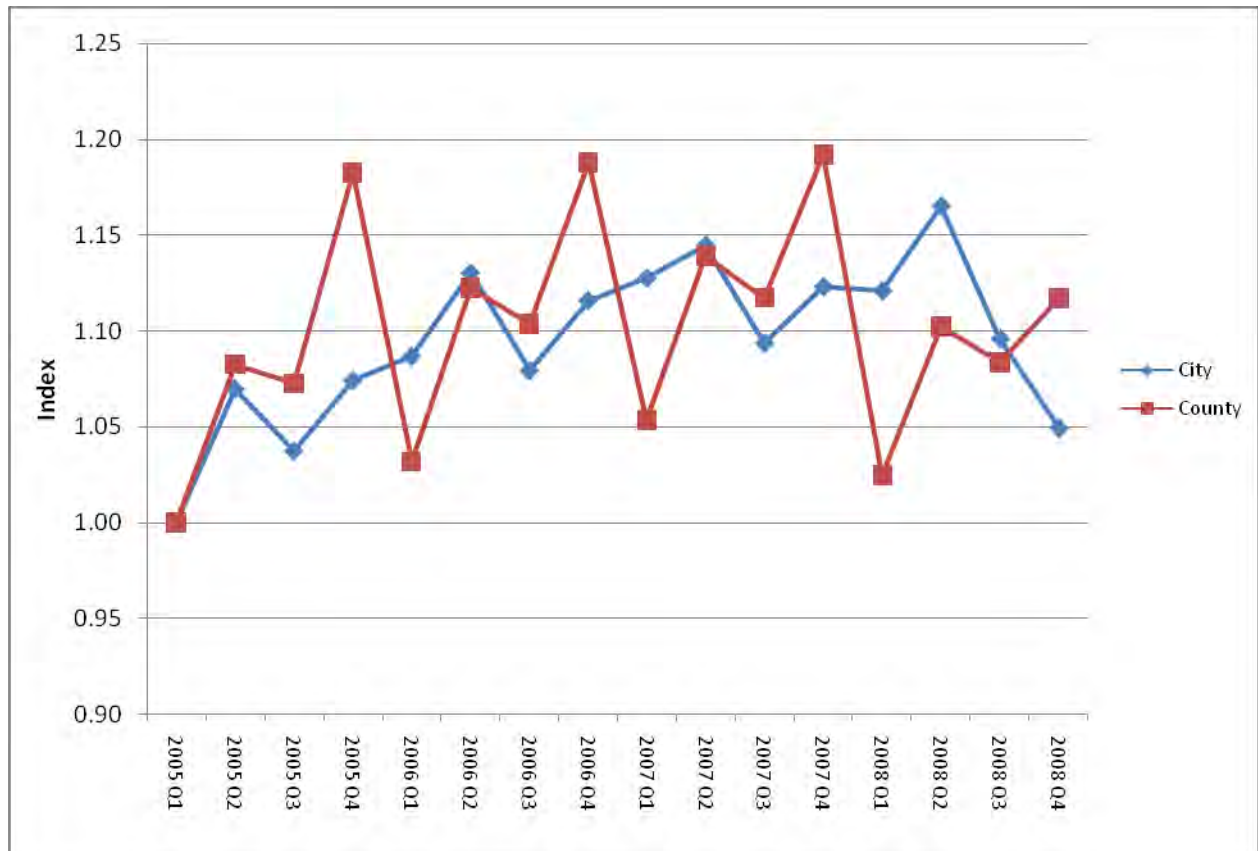


Figure 2: Taxable Sales Growth Index by Corridor Region

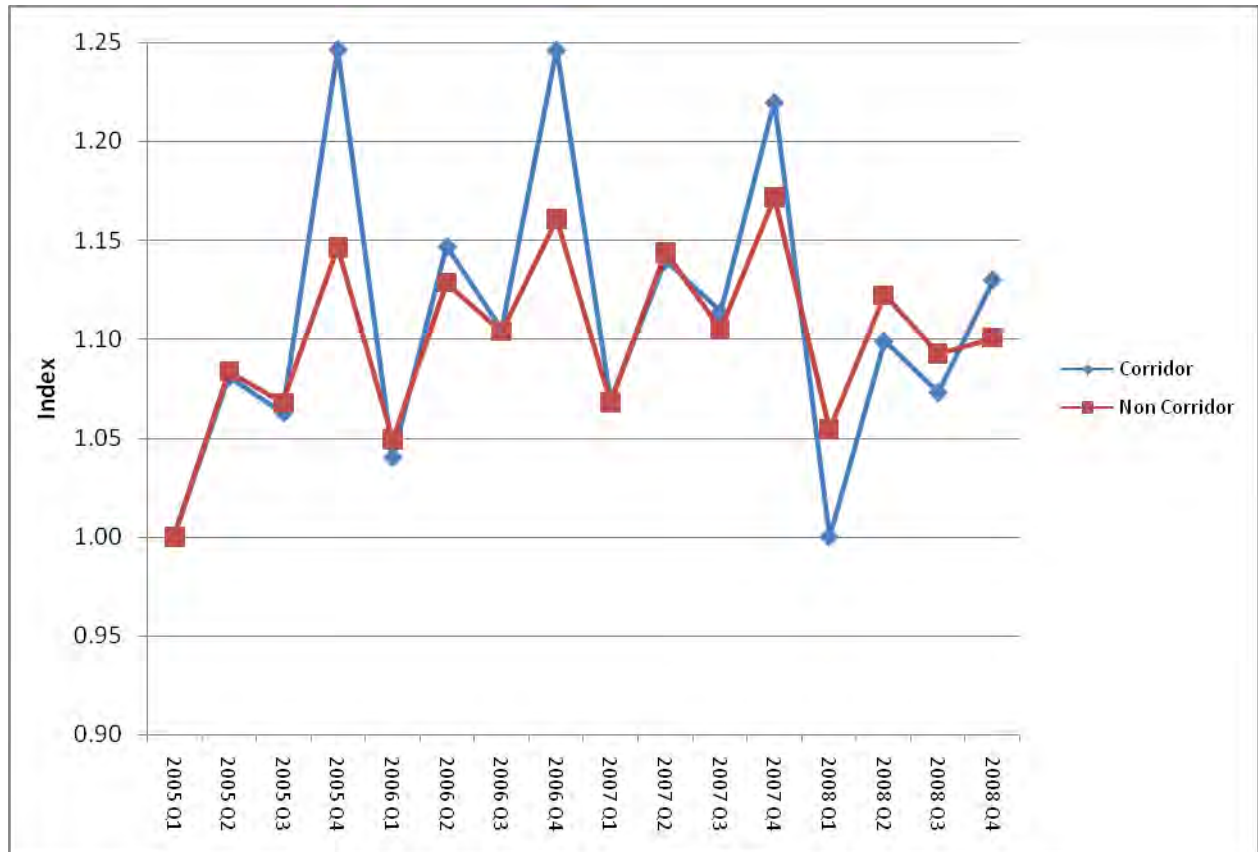


Figure 3: Taxable Sales Growth Index for City Retail

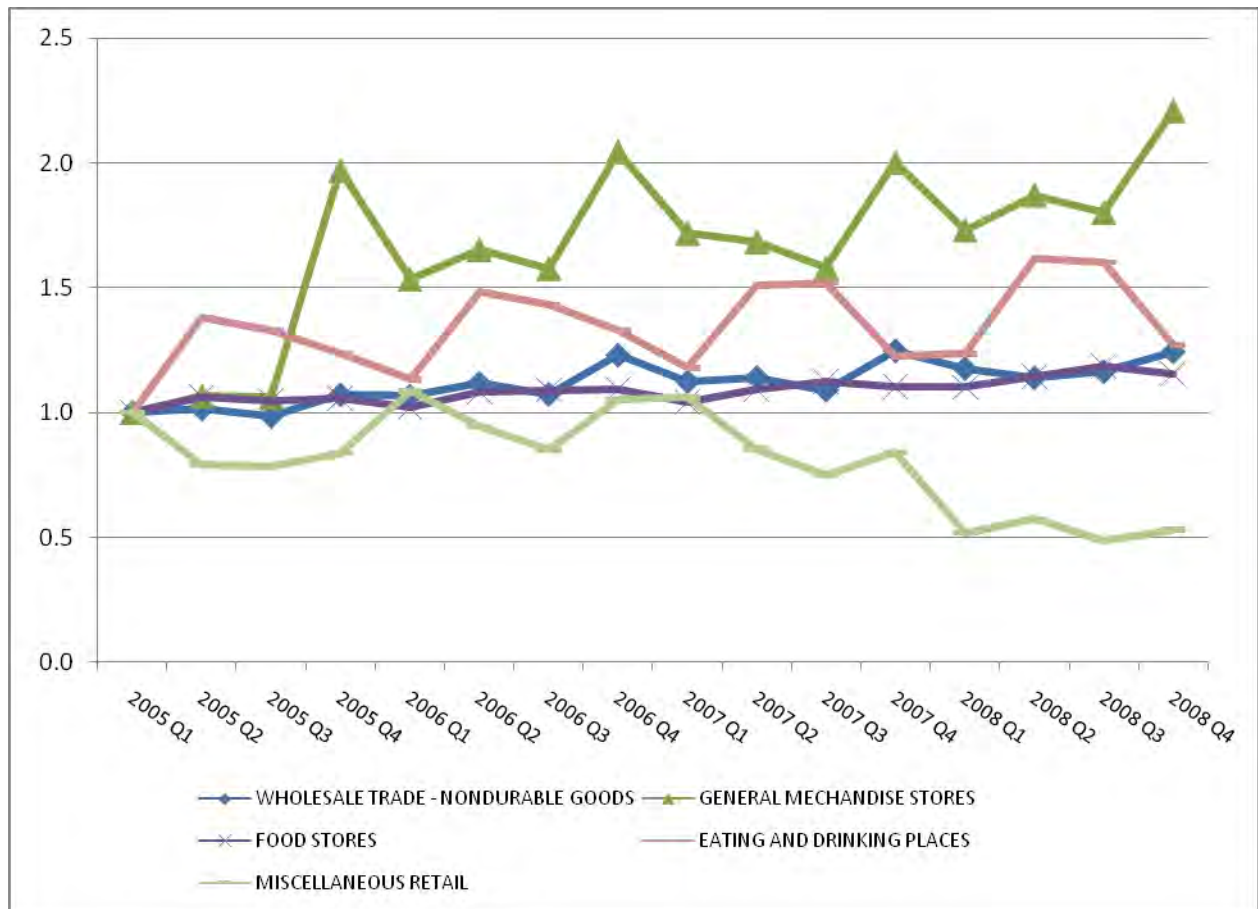


Figure 4: Taxable Sales Growth Index for City Services

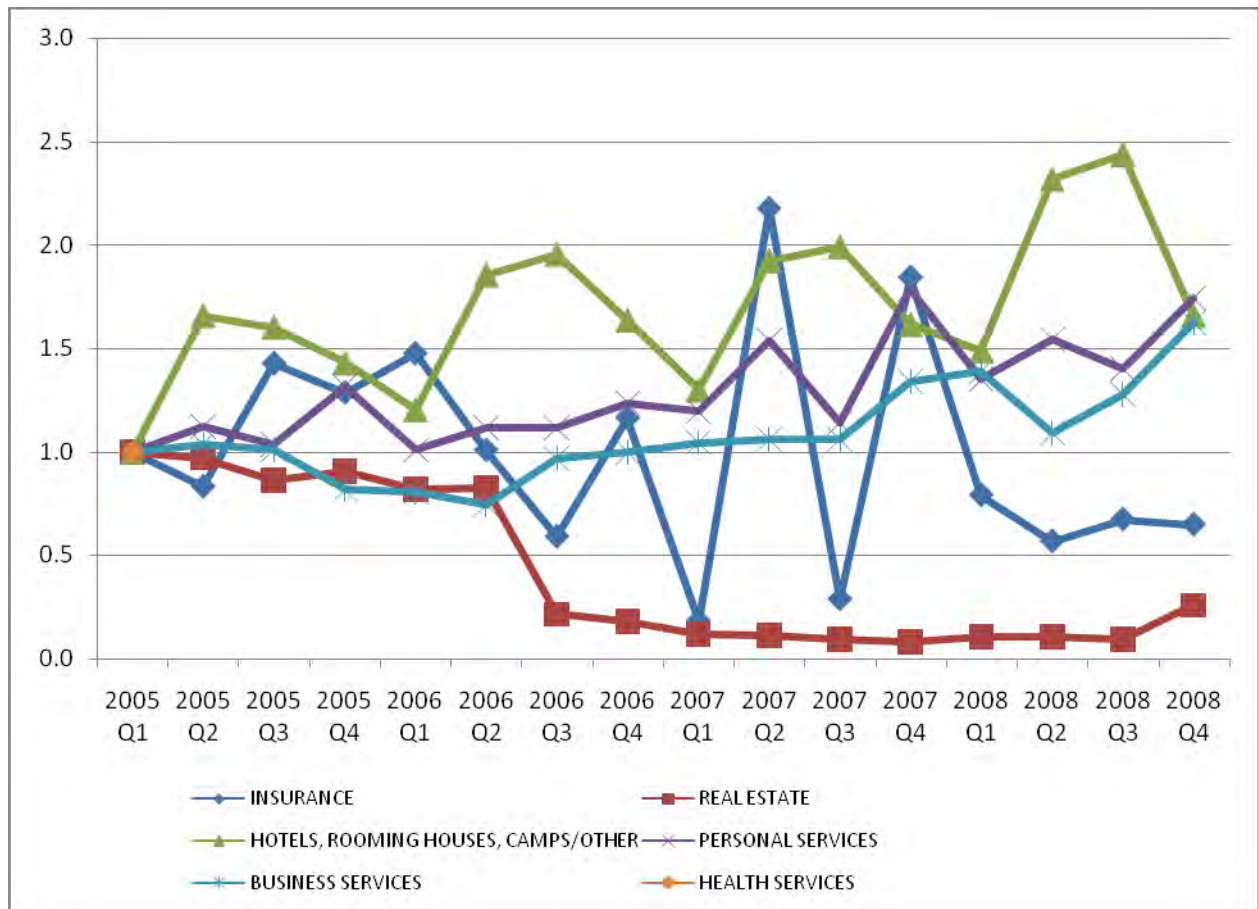


Figure 5: Taxable Sales Growth Index for County Construction

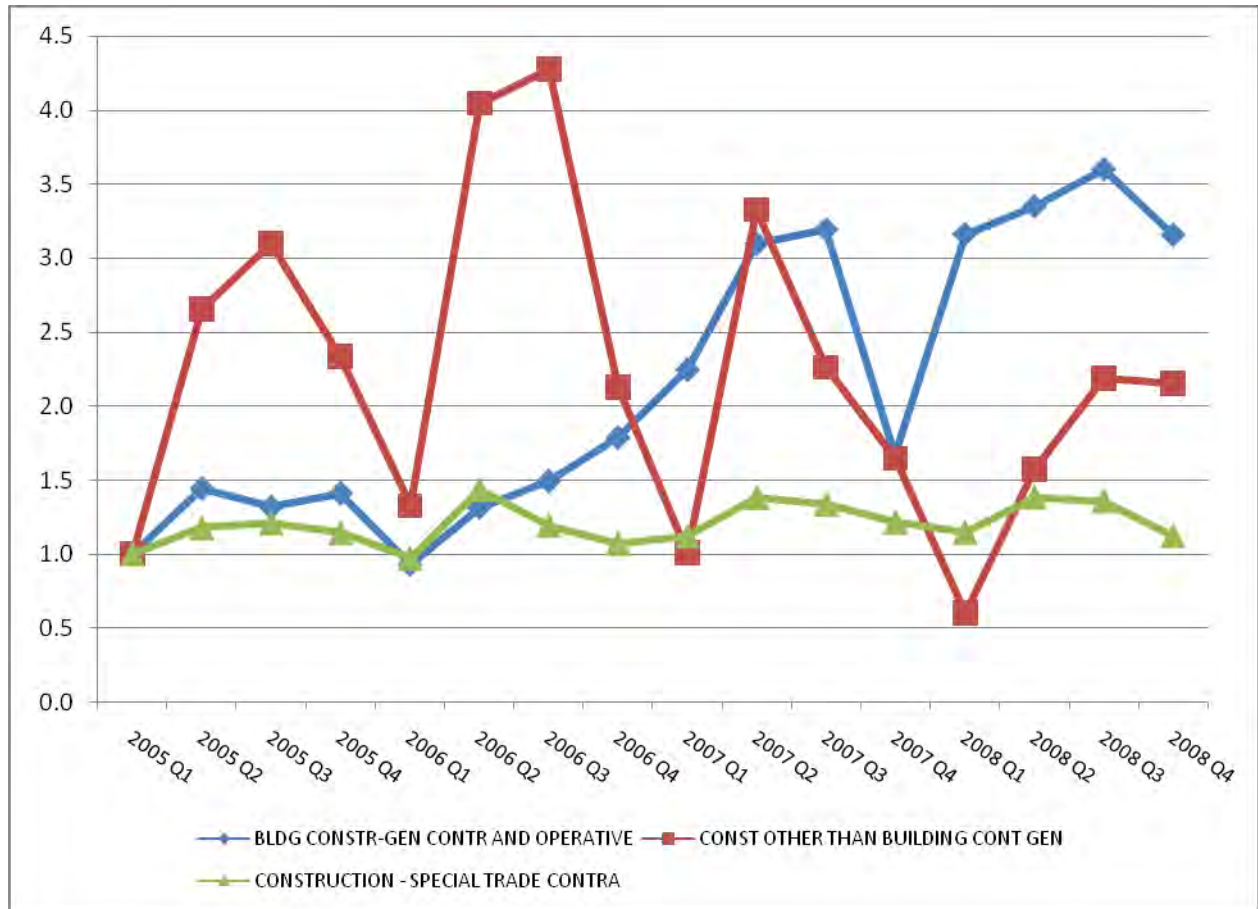


Figure 6: Taxable Sales Growth Index for County Retail

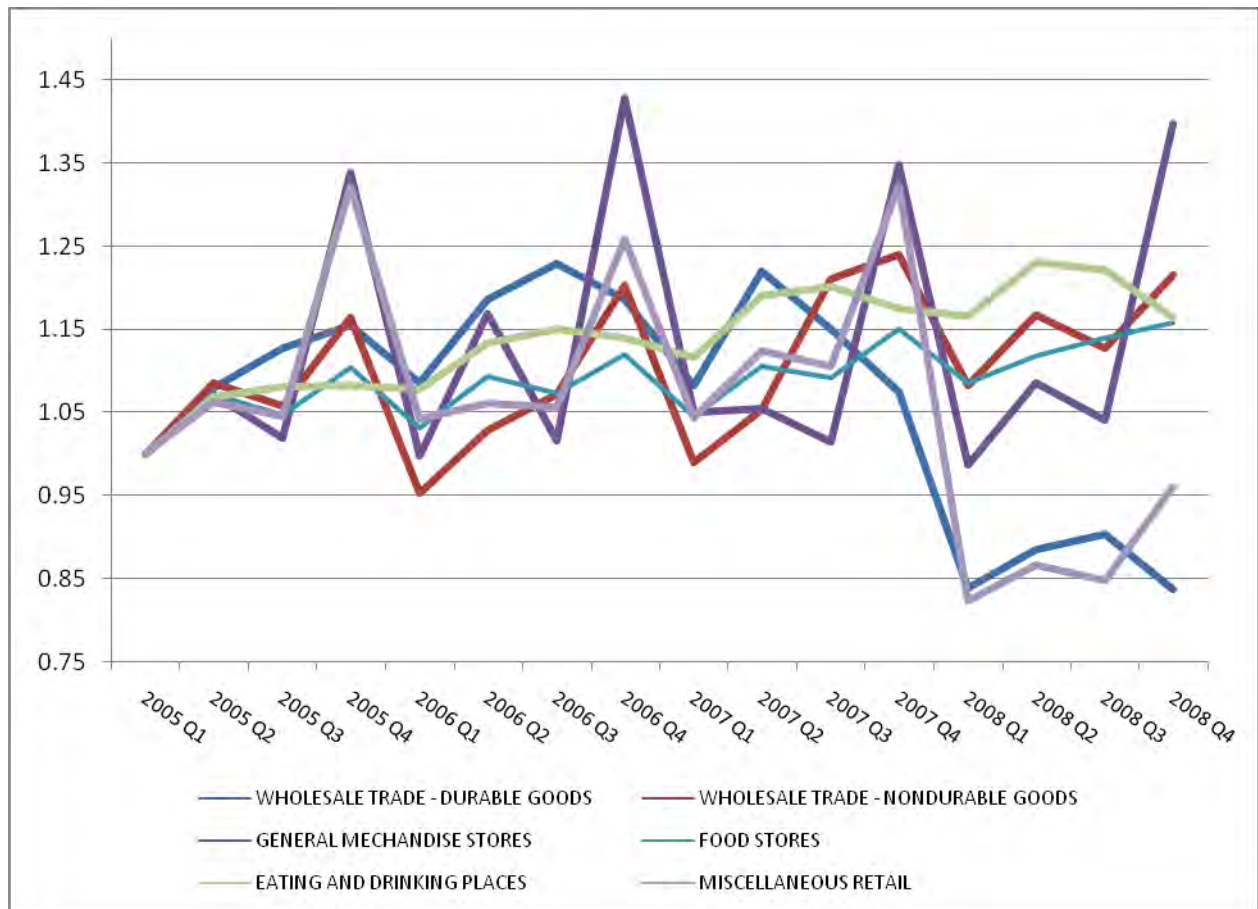
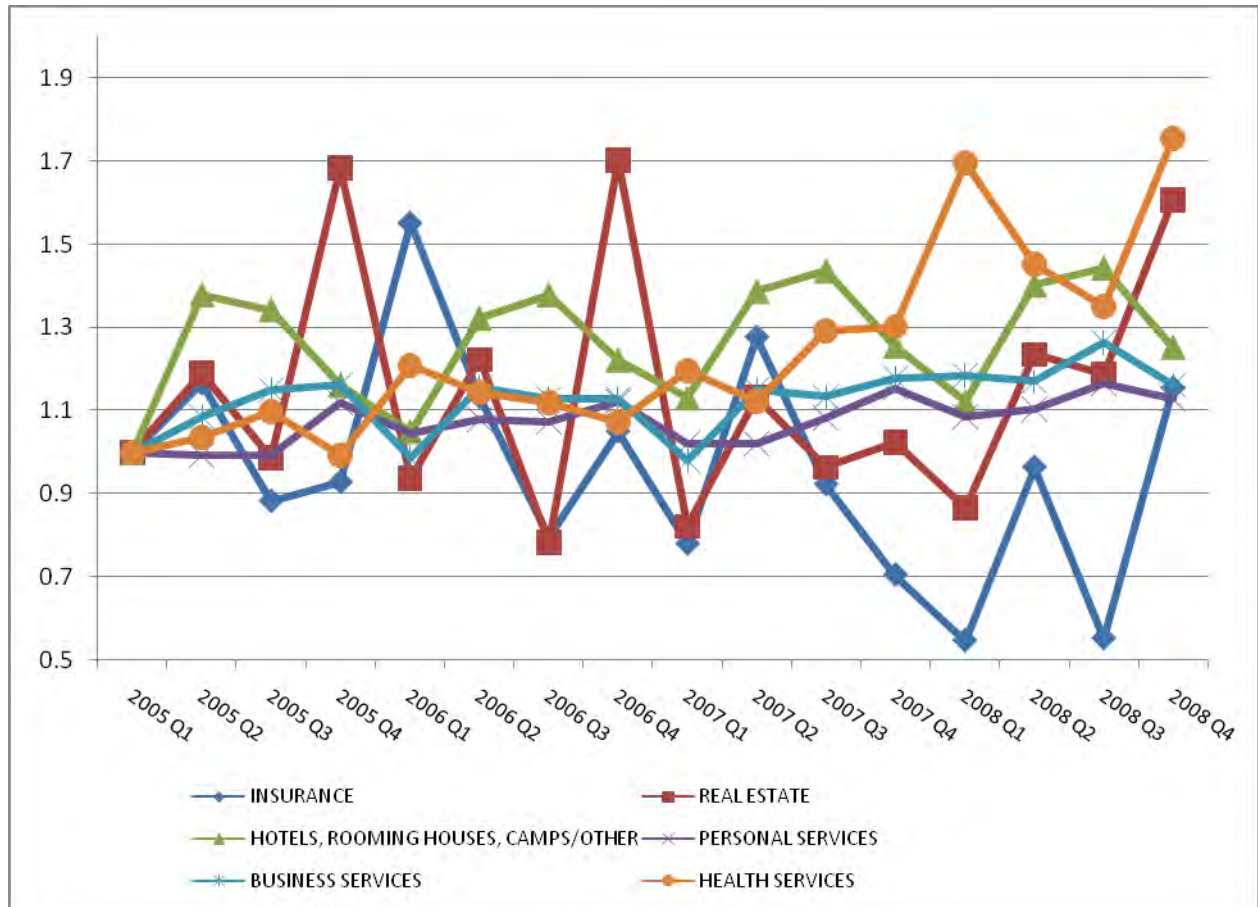


Figure 7: Taxable Sales Growth Index for County Services



APPENDIX D

Quarterly Reports - 2008

The New I-64 Economic and Regional Mobility Study

Quarterly Report # 1

January – February 2008

HDR

Before the Closure

Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.

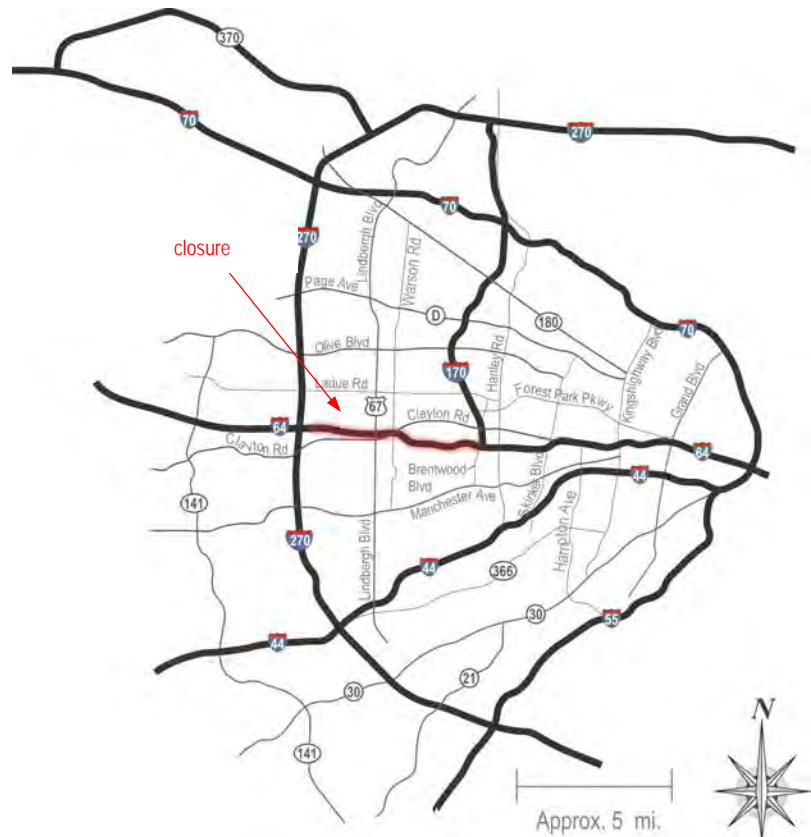
	Not affected at all (1)	Less than before (2)	Same length of time (3)	1 to 5 minutes longer (4)	5 to 15 minutes longer (5)	15 to 30 minutes longer (6)	More than 30 minutes (7)
Work-related	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business and errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical expenses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping, dining or recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traveling throughout the region	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1. Executive Summary

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (see map) was completely closed for construction. The closure is planned to last through the end of 2008, at which time a section to the east will be closed for construction for the bulk of 2009.

This quarterly report assesses the first two months of the western closure, evaluating the three key areas of **Communications** (how MoDOT and others provide information to the public, and the public's response to the project), **Mobility** (the effects of the closure on travel behavior, choices, and flow), and **Economics** (the effects of the closure on businesses within the corridor as well as the economic health of the region). Two months has not been enough time for the immediate effects of the closure to stabilize, nor for the longer-term effects to materialize, but the research team has been able to obtain some initial findings that will be of interest to MoDOT and the general public. To date, the research team has found:



Communications (pp. 2-9)

Over 1,700 members of the public have given feedback through web surveys, mail surveys, personal interviews, and surveys administered by Motorist Assist.

The public is generally **satisfied** with the closure, how information has been communicated, and how they are managing to move around the region.

The closure has had varying effects on the public's travel habits, with nearly 3/4 indicating their **travel frequency has changed** for certain trips. A shift to an **earlier morning commute** was cited by many.

People's reported **travel times are lengthening** (approximately 1/3 to 1/4 of them by 15 minutes or more), although many trip times are relatively unchanged.

Mobility (pp. 10-18)

The closure has **re-routed approximately 140,000 to 150,000 vehicles per day**; travelers have taken alternative routes, altered their travel schedules, and considered alternate modes.

Transit has experienced a **9 percent jump** in comparison to the beginning of last year, but this appears to be a continuation of a longer-term trend in the region.

The RideFinders rideshare program experienced a **32 percent jump** in comparison to the beginning of last year, which appears to be an effect of the closure.

Weather, particularly in February, affected travel times and congestion. As spring approaches, traffic conditions should stabilize and allow a more complete assessment.

Economics (pp. 19-23)

A business survey distributed to over 6,000 area business has so far received very positive responses, **with 97% expressing satisfaction** with MoDOT's execution of the project.

The research team and the business community have been collaborating on the **best economic measurements** to evaluate the closure's effects. Economic reporting tends to lag behind causal events, so future reports will begin evaluating these measures.

Economic **data sources** have been identified and the data collection process has begun.

2. Communications

Communications Highlights

The citizens of the St. Louis region are providing input to this research through online surveys, mailed surveys, handouts by Motorist Assist operators, and personal interviews. Highlights gleaned from these surveys include:

- **Awareness.** From the responses to date, it appears that MoDOT effectively communicated the upcoming closure to the affected population in 2007; pre-closure awareness was reported as very high.
- **Satisfaction.** Respondents are largely satisfied with their ability to travel around the region, and with the level of information that has been communicated by MoDOT and others regarding the closure.
- **Information Sources.** TV News appears to be the best way to reach the majority of the respondents, with radio news, newspapers, and road signs also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a large portion of the general population does not obtain their information via the internet and other methods should continue to be used to reach them.
- **Alternative Routes.** I-44 was the most recommended alternative route. Two nearby parallel arterials, Ladue Road and Clayton Road, received more negative recommendations than positive (with Ladue receiving over 1.6 times as many negatives as positives).
- **Travel Time.** The majority of respondents are indicating that their travel time for basic trips has increased; although many have indicated no change or even an improvement in travel times.
- **Travel Mode.** Initial responses on how the closure has changed people's mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been, and continues to be, the automobile.
- **Personal Impact.** The closure is affecting people's trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping and eating out. Overall, almost three quarters of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Some residents have shifted their work hours, especially the respondents to the Web survey, who indicated a shift to earlier morning commutes.

To date, the responses have been fairly consistent over the various survey methods. This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population (other than issues related to online access, which is by definition skewed in the Web survey responses).

Communication Assessment Objectives and Methods

Major Goals – Communication Assessment

- Develop and implement survey instruments
- Determine effectiveness of pre-closure notification
- Assess communication methods
- Measure participant satisfaction for key issues
- Estimate changes in behavior
- Hear everyone's voice
(obtain generalized sample)

Total Surveys this Period

Web	801
Mail	700
In-person	100
Motorist Assist	
MoDOT	98
County	38
TOTAL	1,737

Web Surveys Completed Weekly

Jan 6 - 12	500
Jan 13 - 19	116
Jan 20 - 26	76
Jan 27 - Feb 2	27
Feb 3 - 9	29
Feb 10 - 16	10
Feb 17 - 23	19
Feb 24 - Mar 1	24

Four classes of survey instruments (included in Appendix A) were developed to assess the communication aspects of this project:

- (1) A detailed online survey was developed; participants had the option to complete a brief, medium, or detailed survey. Surprisingly, 62.4 percent of the respondents were interested enough in sharing their opinion that they elected to complete the detailed survey. Links to the survey were placed on MoDOT's main website as well as the New I-64 Project site; also, the survey was highly promoted by MoDOT's public relations team.
- (2) To help obtain a representative sample, a physical survey was developed and mailed to 10,000 respondents in twenty-eight zip codes near the I-64 project.
- (3) In-person surveys were utilized to assess public opinions at two major shopping locations in the immediate area of the closure (the St. Louis Galleria near I-64/I-170, and Schnuck's grocery store at Lindbergh Boulevard and Clayton Road).
- (4) Two project satisfaction measures were also added to the Motorist Assist surveys that are distributed to people serviced by Motorist Assist operators.

In order to facilitate better comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the "not sure" or "no opinion" percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Communications Results

Use of I-64, Knowledge of the Closure

The survey results indicate that the public was very aware of the closure well before it occurred. 98.1 percent of the on-line respondents were aware of the upcoming closure in 2007, and since 96.6 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information.

Usage of I-64 before Closure (Web Only)

Almost every day	33 %
Very rarely	20 %
Two to three times a week	16 %
Once a week	15 %
Most weekdays	13 %
Never	3 %

Knowledge of Closure (Web Only)

Aware of closure before survey:	98 %
Learned about closure:	
Before Dec '07	94 %
Dec '07	4 %
Jan '08	2 %

Satisfaction

The charts at right summarize survey respondents' opinions in the area of satisfaction. As the graphs indicate, 69 percent or more of the respondents expressed satisfaction in response to each question in each forum, and responses were fairly consistent across the different survey types.

Satisfaction was highest with "how well the public has been kept informed" (91 to 95 percent) and "the timeliness of information" (90 to 94 percent). The least amount of satisfaction was expressed for "how traffic is flowing in work zones" (69 to 76 percent) and "accuracy and understandability of construction zone signs" (75 to 77 percent).

Based on an initial review of the interview surveys that were recently completed at two shopping locations near the closed section of I-64, it appears they are generally in agreement with the above results. For most measures, over 80 percent of the interview respondents were either satisfied or very satisfied. This included opinions regarding both the decision to close I-64 and overall satisfaction with how the I-64 closure has been handled.

Note that written responses to the surveys are still being processed, but one notable item is that respondents have expressed satisfaction regarding the regional collaboration on signal timing that has facilitated arterial flow during construction; the public has also expressed a desire to see these timing improvements continued after the project is complete.

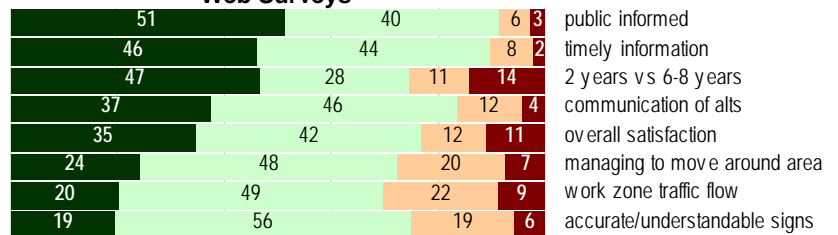
Personal Impact of the Closure

As the graphs at right indicate, respondents much more often modified their frequency of travel to certain areas than the location of their basic trip destinations. The most affected destinations were shopping (29 to 40 percent) and eating out (21 to 37 percent).

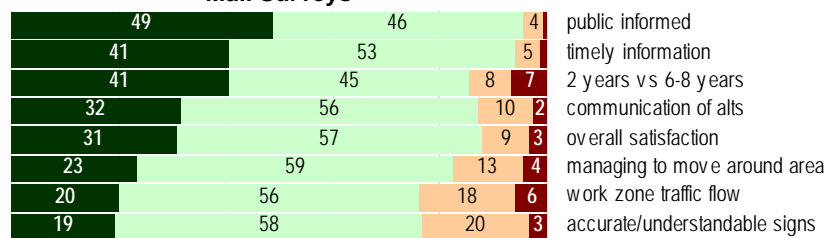
Respondent Satisfaction (% of respondents)

Very Satisfied Satisfied Dissatisfied Very Dissatisfied

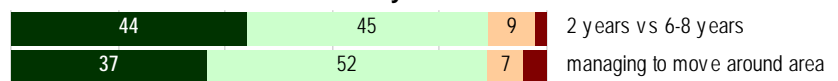
Web Surveys



Mail Surveys



Motorist Assist Surveys

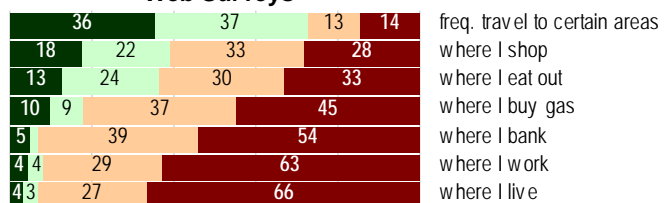


0 20 40 60 80 100

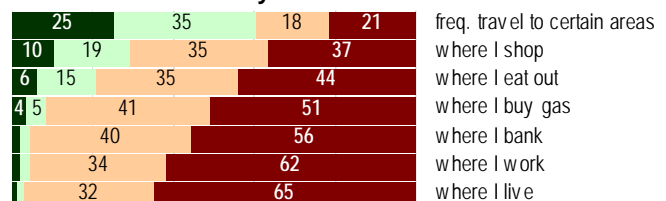
The Closure Has Changed... (% of respondents)

Strongly Agree Agree Disagree Strongly Disagree

Web Surveys



Mail Surveys



Most respondents indicated that they have continued to work the same hours in the same location since the closure. The online respondents, including residents more distant from the closure than the mailed survey, were much more likely to have shifted hours in response to the closure compared to those who completed the mailed survey.

Spatial/Temporal Effect on Job

	Mail	Web
Same hours, same location	87 %	70 %
Shifted hours	8 %	23 %
Different location more often	4 %	5 %
Quit job	1 %	2 %

Typical Period of Commute (or Other Travel) Web only

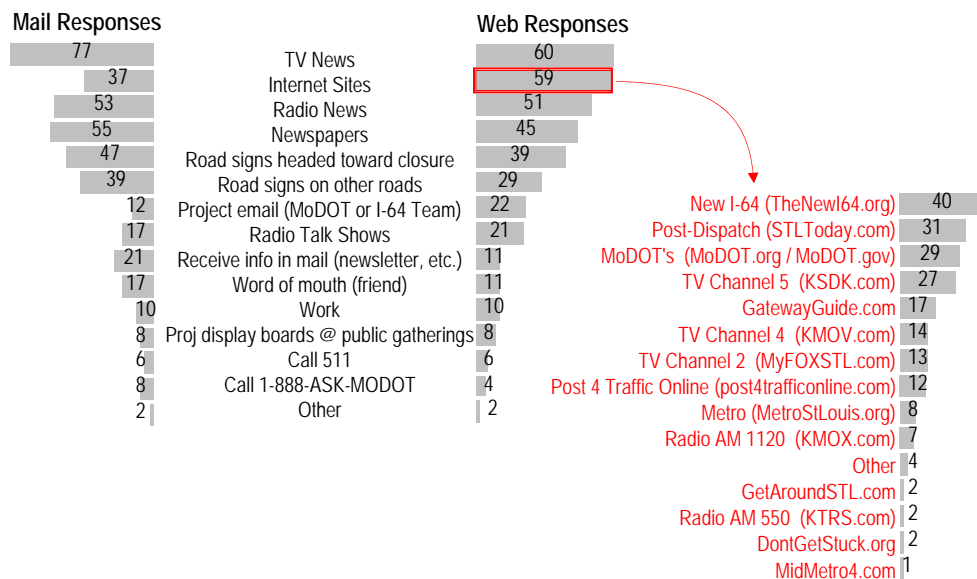
	before	after
before 7 am	20 %	28 %
7 - 9 am	41 %	32 %
9 am - 3 pm	10 %	10 %
3 - 6 pm	37 %	38 %
after 6 pm	12 %	13 %

The web survey revealed a stated shift to earlier morning commute/travel hours, but no significant shift in the evening hours. It should be noted that anecdotal information, and other observations, indicate that this shift was high initially, but has lessened over time as conditions begin to stabilize. The high number of web survey responses in the early weeks of the closure may therefore skew this data; future reports will further examine time trends to explore this effect.

Information Sources and Communication Methods

TV News was considered to be the best method for MoDOT to distribute information to the public by the respondents of both the online and physical surveys. As expected, there was much variance in the perceived effectiveness of internet communications between the two survey types. Online respondents, who had to have access to the internet to even complete the survey, thought the internet was the second best way for MoDOT to provide information to them. However, those who returned the physical surveys were not as likely to use the internet to obtain their information (only 37 percent of these respondents thought the internet was a good way for MoDOT to provide them with information). Radio news and newspapers were also considered very good methods of communication, followed by road signs.

Best Way for MoDOT to Distribute Information (% responses; multiple choices allowed)

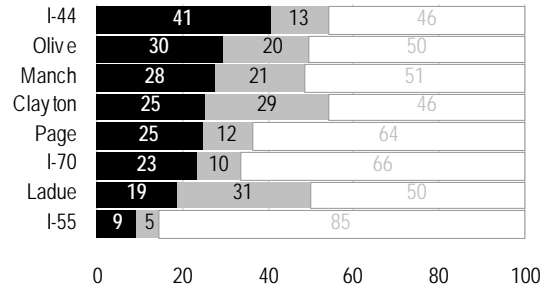


Alternative Routes

Respondents were also asked to provide input about eight alternative routes. I-44 was the most recommended route, with 41 percent of the respondents recommending it. Clayton Road and Ladue Road were the least recommended routes, in the sense that more respondents recommended against their usage than for them.

Alternate Routes (% responses)

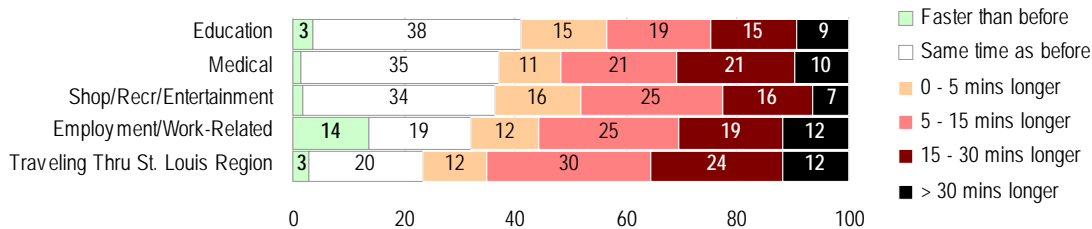
■ tried - recommend ■ tried - don't recommend □ haven't tried



Travel Time

As indicated by the graph below, the majority of Web survey respondents (58 to 78 percent) indicated that various trips had gotten longer since the closure, with a total of 9 to 12 percent responding that their trips had increased by 30 minutes or more. Notably, when asked specifically about work trips, 14 percent of respondents indicated that their work trips were actually faster than before.

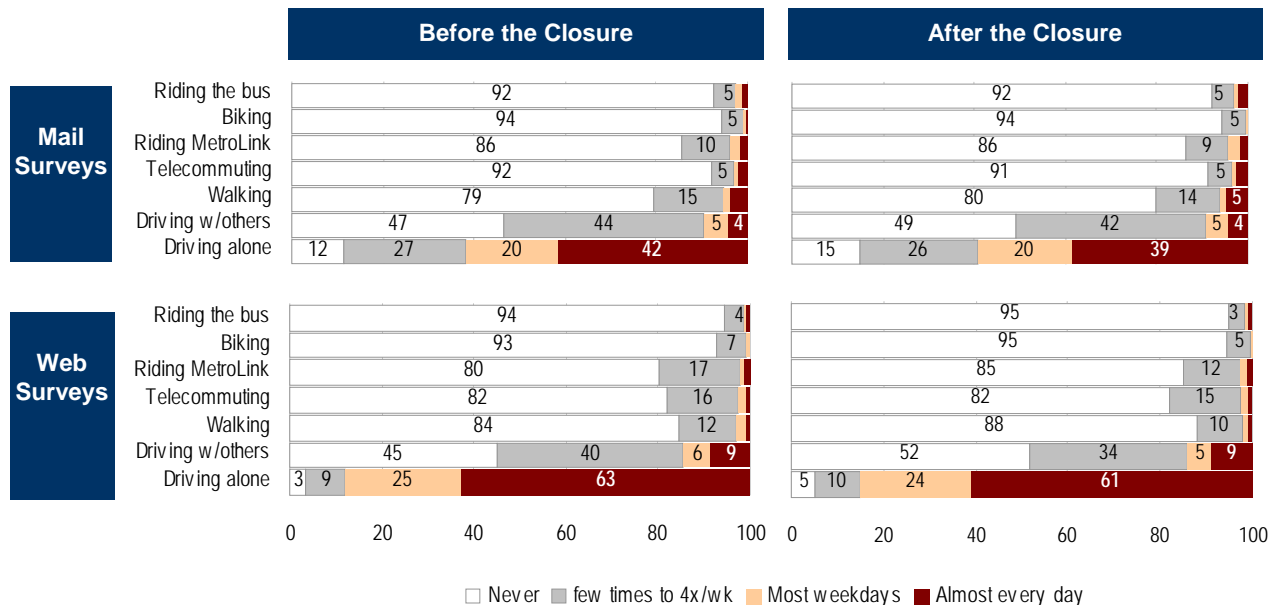
Travel Time Difference by Purpose (% responses, Web survey only)



Travel Modes

To date, the surveys have revealed only slight changes in reported travel mode since the closure, as illustrated below. Single-occupant driving has apparently slightly decreased by 2 to 3 percent, and carpooling also appears to have decreased. For other modes, the fluctuations are not stark, but there appears to have been some change in each. Further study of these results, in comparison with mobility results, may shed additional light on commute options.

Travel Mode (% of respondents)



Demographics

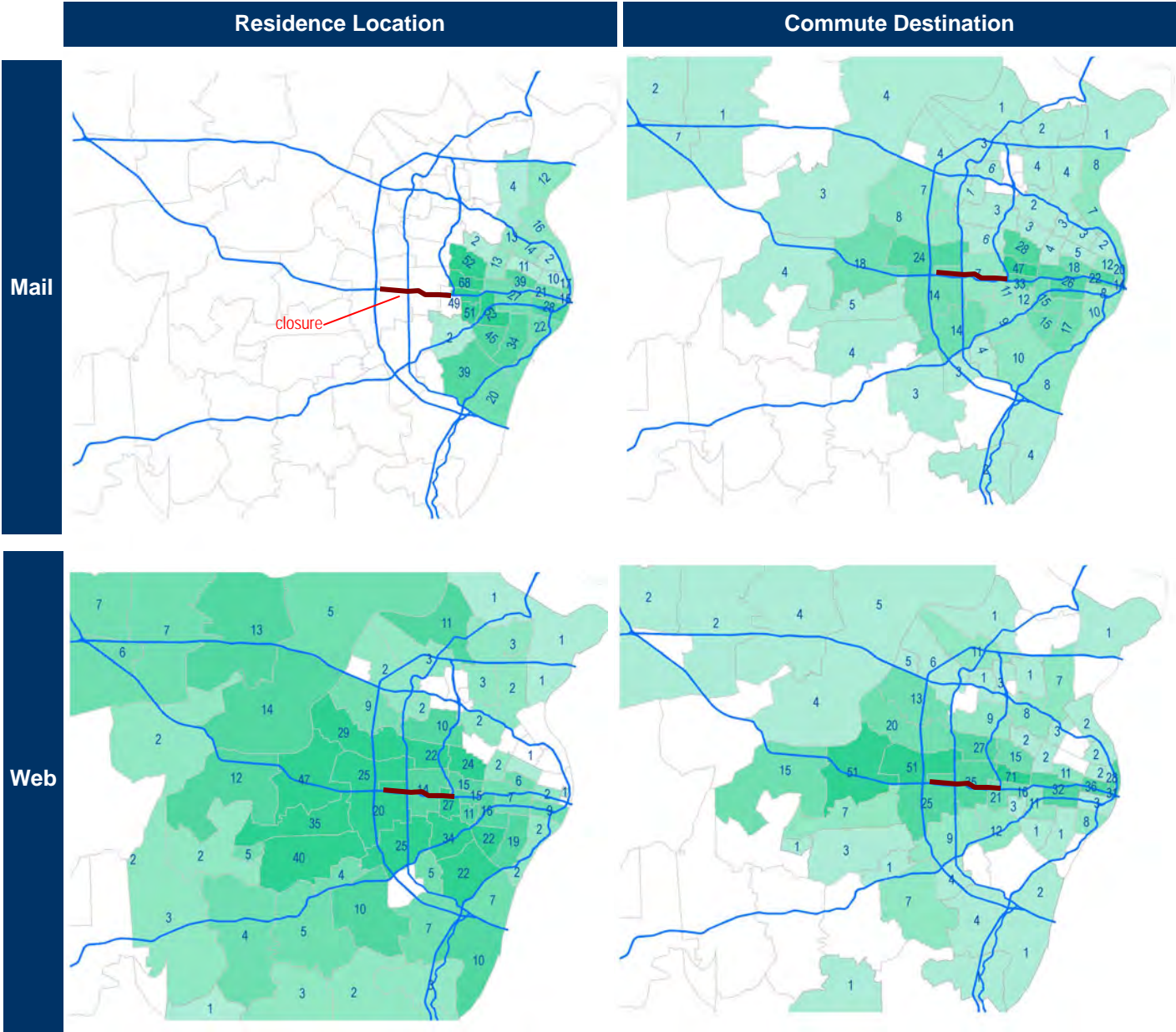
The table at right summarizes the responses to demographic questions from the respective surveys. One of the purposes of supplementing the Web survey with a mail survey was to reach populations without internet access, in order to ensure the research considered the input of as many groups as possible – a representative sample. By targeting the mail survey at many of the zip codes near the closure, the research team succeeded in its objective of reaching a more diverse population, especially in reaching more minorities and more females.

Demographics of Survey Respondents

Age	Mail	Web	Gender	Mail	Web
under 25	5 %	11 %	Male	41 %	54 %
26 to 40	20 %	35 %	Female	59 %	46 %
41 to 65	57 %	52 %			
Over 65	19 %	3 %			
Race	Mail	Web	Income	Mail	Web
American Indian	1 %	1 %	Less than \$20,000	-	2 %
Asian	1 %	2 %	\$20,000 to \$40,000	-	11 %
Black/African-American	15 %	2 %	\$40,001 to \$60,000	-	17 %
Hispanic/Latino	1 %	1 %	\$60,001 to \$90,000	-	21 %
White/Caucasian	79 %	92 %	\$90,001 to \$120,000	-	24 %
Other	2 %	2 %	\$120,001 to \$150,000	-	9 %
			\$150,001 to \$200,000	-	9 %
			More than \$200,000	-	7 %

The maps on the following page illustrate the zip codes of survey respondents within Missouri (a small portion of the responses – around 2 percent – were from outside the state). These results are preliminary; future reports will likely aggregate zip codes into larger geographic units with more statistical robustness.

Survey Respondents' Residence, Commute Destination (by zip code)



3. Mobility

Mobility Highlights

The most significant highlight of this quarter, from a process standpoint, was the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. Key initial findings are listed below:

- Approximately 140,000 to 150,000 daily vehicles used the segment of I-64 between Ballas Road and I-170 before its closure. The assessment of where those vehicles have gone is still underway; it appears that 25,000 have shifted to I-44; traffic on I-55 may have increased by 5,000 vehicles per day. Volume data is still being evaluated for I-70, I-270, and the many parallel facilities that have been impacted by the closure.
- Travel speeds and times are also still under evaluation, but it appears that travel speeds have dropped at least slightly during the peak periods on many key regional facilities, in conjunction with volume increases.
- Transit usage is up by 9 percent over a year ago; however, this trend is not far out of alignment with the growth of the past two years.
- The RideFinders Rideshare program experienced a 32 percent jump in rides compared to January 2007; this increase, plus smaller but noteworthy increases over the past six months appears to have been in response to (and anticipation of) the I-64 closure.

Mobility Assessment Objectives and Methods

Major Goals – Mobility Assessment

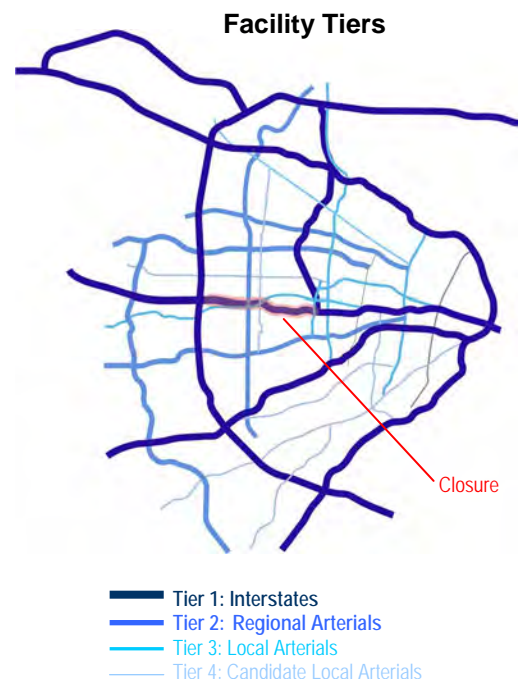
Assess the shifts (temporal, spatial, and modal) in travel demand throughout the region

Assess congestion effects of the closure

Assess closure effects on transit, ride-sharing, and park-and-ride demand.

This assessment uses a variety of tools to measure the region's mobility before, during, and after the closure period. The assessment examines traveler shifts and their effects, using a multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels, and future reports will continue to hone and refine the assessment.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Tier 4 facilities are being assessed to see whether they should be included in the Tier 3 grouping, or excluded from further analysis. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) are being gathered throughout the duration of the closure to measure its regional impacts.



Mobility data is being obtained through numerous sources:

- MoDOT is providing historical traffic counts through its count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times since the I-64 closure. MoDOT also maintains statistics for its park-and-ride facilities across the state, and is providing monthly count data for its facilities in the region. Finally, MoDOT has produced a series of e-mail updates (initially daily, now weekly) that provide area residents (and the study team) with important mobility information.
- Traffic.com is a commercial Web site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. These data are based primarily on sensors placed throughout the area. Traffic.com archives traffic volume, travel speed, and incident data – in 1-minute intervals – and has an agreement to share this information with MoDOT. The research team developed customized software routines to download, organize, prune, and analyze this data.
- St. Louis County has conducted traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and is providing statistics aggregated on a monthly basis. In addition, Metro collects parking data at its stations with park-and-ride facilities.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data is provided on a monthly basis.
- The research team is supplementing data collection where necessary, including travel-time runs, traffic counts, and field observations.

Mobility Results

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by The New I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. The research team has recently received a complete list of these improvements, and they will be incorporated into future reports.

Key Improvements to Regional Highways/Roadways

I-70 Restripe from I-170 to I-270 (add lane in each direction)

I-44 Restripe from I-270 to I-55/I-70 (add lane in each direction)

I-270/I-64 Restripe interchange ramps to improve traffic flow

I-270/I-44 Restripe interchange ramps to improve traffic flow

Clayton Road Restripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road

Ladue Road Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road

Improved Signal Timing along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park Parkway

Traffic Volumes

Prior to the closure, in baseline 2006, I-64 carried approximately 107,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding “outlier” days). In January-February of 2007, one year before the closure, this section of I-64 carried approximately 143,000 vpd on a typical weekday. 100 percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

One primary question of interest is, “where did all the traffic go?” Several sources can be used at this stage to answer that question - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The table at right summarizes the information MoDOT has reported in the briefings, and shows that the most change has occurred during the a.m. peak hour.

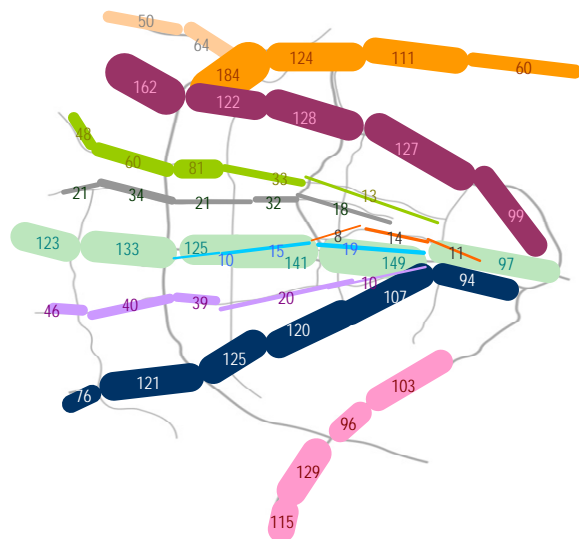
MoDOT-Reported Volume Increases
(Compared to Pre-Closure Volumes)

	Jan 14	Jan 21	Feb 4	Feb 11	Feb 18
AM Peak Hour					
Rt 141 @ I-44	10%	4%	5%	5%	0%
Page	10%	15%	15%	15%	15%
Olive @ Fee Fee	-	5%	5%	5%	-
Olive e/o Ballas	5%	40%	60%	55%	55%
Manchester	10%	10%	25%	30%	20%
Lindbergh SB	-	270%	200%	200%	200%
Lindbergh NB	-	(-50%)	(-40%)	(-40%)	(-40%)
PM Peak Hour					
Rt 141	5%	(-5%)	5%	0%	(-5%)
Page	10%	15%	15%	15%	20%
Olive @ Fee Fee	-	(-10%)	10%	-	(-10%)
Olive @ Ballas	(-10%)	15%	15%	20%	15%
Manchester	20%	15%	15%	15%	15%
Lindbergh SB/NB @ Manchester	-	(-50%)	(-50%)	(-50%)	(-50%)

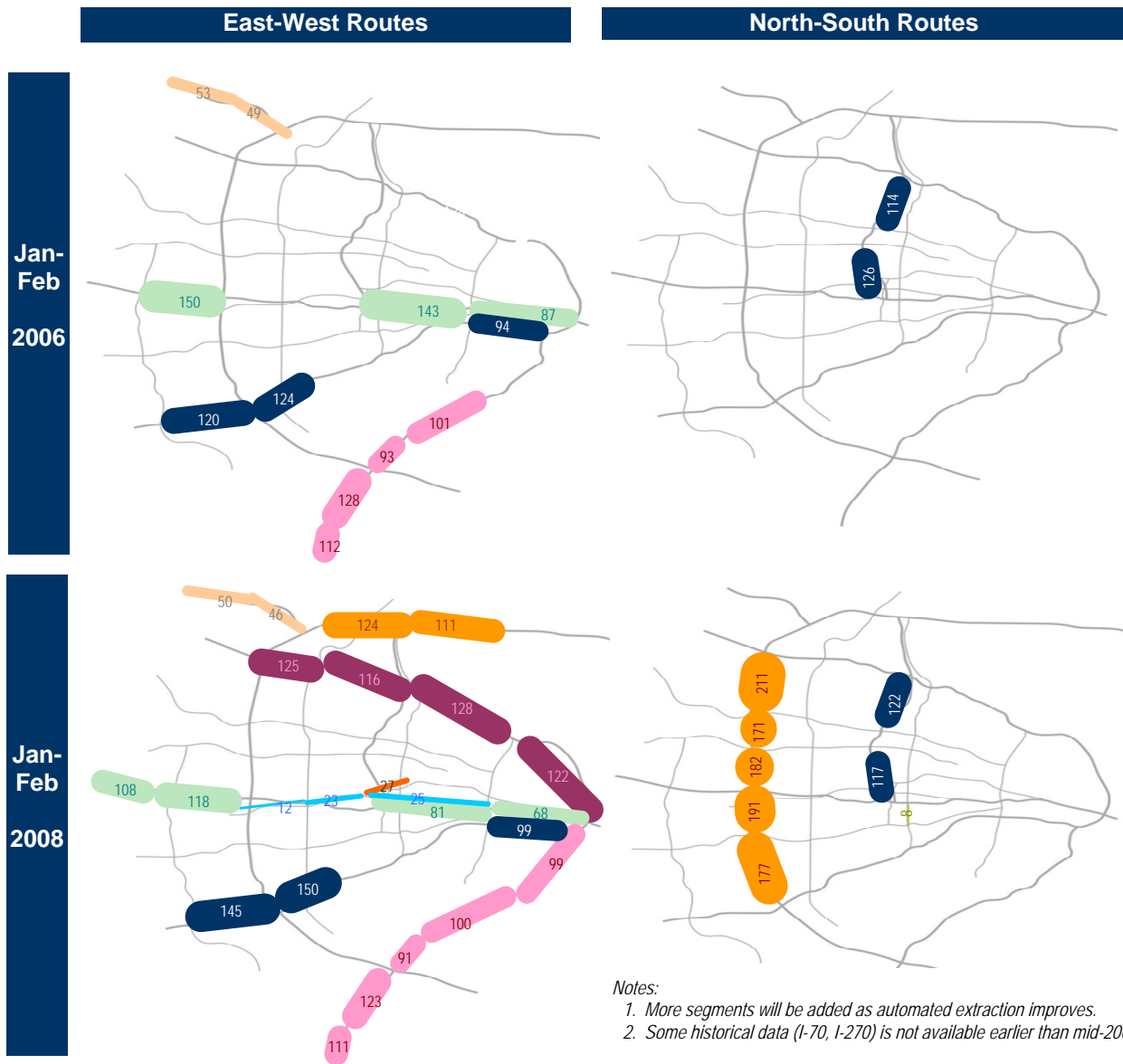
The graph at right, extracted from Traffic.com, MoDOT, and St. Louis County data, shows east-west daily traffic volumes for many of the key study facilities for the baseline year of 2006. Similar data has been extracted for the key north-south facilities (I-270, I-170, Lindbergh Boulevard, etc.) It is important to note that this information averages every non-holiday, non-“outlier” weekday from 2006, and therefore is not a good base against which to compare the effects of the closure in the first two months of 2008.

The maps on the next page show a more fair initial comparison for selected segments. They compare weekday January-February 2008 volumes with the January-February 2006 volumes. (Weekend volumes are also being assessed.) Future reports will likely extract further data at more locations, now that an automated process has been established for working with these enormous data sets. However, continuous archived baseline data for some routes, such as I-70 and I-270, is not available for time periods before mid-2007.

Baseline Daily Weekday Traffic (000's)
East-West Corridors (2006, full year)



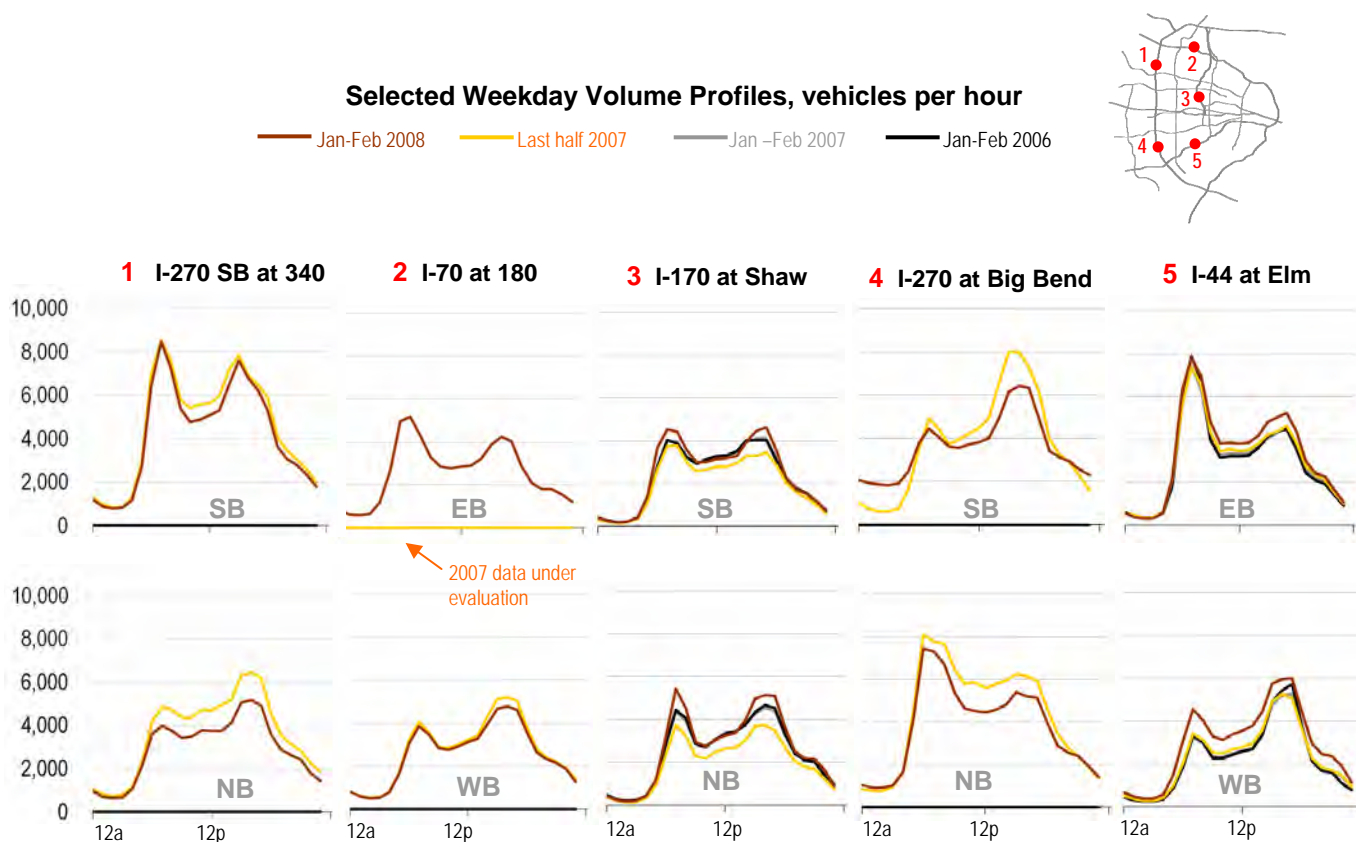
Daily Traffic Volume Comparison (000's) on Selected Segments, 2008 vs. 2006 Baseline (PRELIMINARY)



Based on these maps, the following preliminary conclusions can be gleaned:

- Traffic volumes on I-64 immediately west of the closure have decreased by approximately 32,000 vpd; immediately east of the closure, they have decreased by approximately 62,000 vpd.
- Volumes on I-44 east of Kingshighway have increased on the order of 5,000 vpd; near I-270 (on both sides), they have increased by approximately 25,000 vpd.
- Volumes on I-170 north of I-64 have decreased by approximately 9,000 vpd, while volumes further north near I-70 have increased by approximately 8,000 vpd.
- Volumes on I-55 do not appear to have changed substantially, with no increase over 5,000 vpd shown in the current analysis.

The Traffic.com data can be examined at more refined resolutions, from hourly totals all the way down to five-minute volumes. The graphs below give some initial indications of the effects of the closure, but also hint at other ways the data is being examined. Future reports will discuss the effect of the closure on the **duration of the peak period**, informed by hourly and sub-hourly time-increment data. Initially, it can be seen that locations with 2006 data have experienced volume increases between January-February 2006 and January-February 2008, and some peak periods may have lengthened.



Travel Times

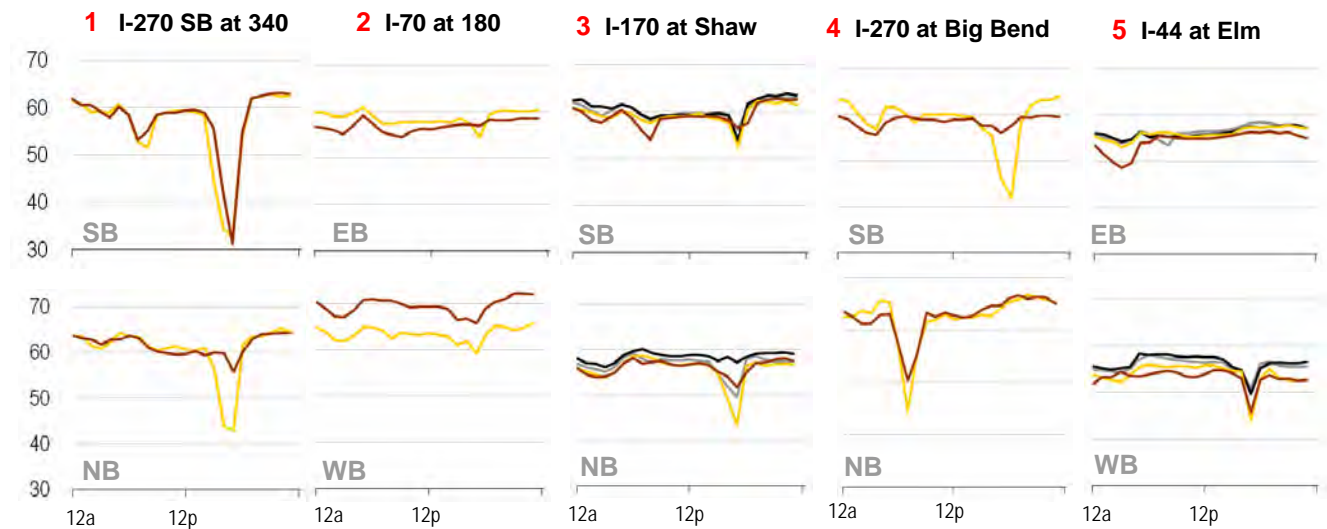
MoDOT has been reporting travel time information in its e-mail updates, largely on key interstate segments. The table at right summarizes these updates for the first quarter. Several segments have shown substantial variability in travel time over this period. Active winter weather has certainly played a major role in these variations, as February especially was notable for an abnormally high amount of snow events. To supplement this reported information, the research team will be using Traffic.com's archived speed data to calculate travel times on freeway segments throughout the region. The graphs below illustrate a sample of the data that can be obtained from this source, and show that, where comparable 2006 baseline data are available, speeds (especially congested speeds) appear to have dropped slightly in several areas comparing January-February 2008 to January-February 2006. As more data become available and conditions stabilize, these averages will become more statistically relevant, allowing more refined conclusions to be drawn.

MoDOT-Reported Travel Times (minutes)

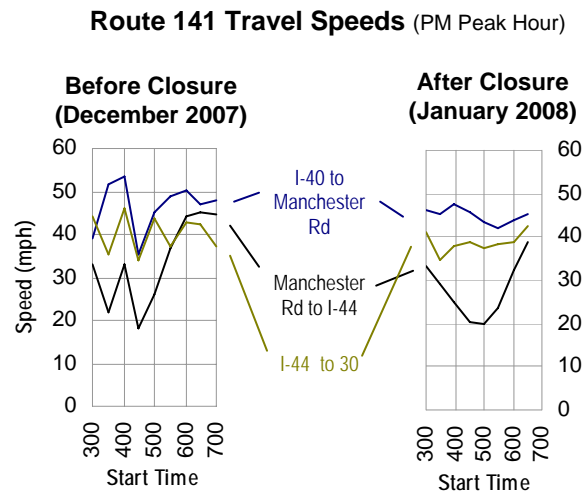
	Jan 21-27	Feb 4-10	Feb 11-17	Feb 18-25
AM Peak Hour				
I-270 WB @ Chain of Rocks	9-11	10 - 12	9 - 12	9 - 15
I-270 NB from I-55 to I-44	6	6 - 26	6 - 7	6 - 18
I-270 NB from I-44 to I-64	7-8	7 - 10	7 - 10	7 - 10
I-255 @ Jefferson Barracks	4	4	4	4
I-170 EB/WB from I-70 to I-64	-	-	7 - 8	7 - 8
I-70 EB from I-270 to I-170	4	4	4 - 7	4
I-70 EB from I-270 to downtown	11-15	11 - 17	11 - 20	11 - 40
I-44 EB from I-270 to downtown	14-16	14 - 16	14 - 15	14 - 15
PM Peak Hour				
I-270 EB @ Chain of Rocks	12-20	12 - 28	9 - 34	12 - 21
I-270 SB from I-70 to I-64	15 - 47	15 - 57	15 - 68	8 - 27
I-270 SB from I-64 to I-44	-	-	-	7 - 22
I-255 @ Jefferson Barracks	4	4	4	4
I-170 SB from I-70 to I-64	-	-	7 - 8	7 - 8
I-170 NB from I-64 to I-70	-	-	7-16	7 - 8
I-70 WB from downtown to I-170	11-15	11 - 29	11 - 22	11 - 14
I-70 WB from I-170 to I-270	4	4 - 6	4 - 8	4
I-44 WB from I-270 to downtown	14-15	14 - 16	14 - 20	14

Selected Weekday Speed Profiles, miles per hour

Jan-Feb 2008 Last half 2007 Jan -Feb 2007 Jan-Feb 2006



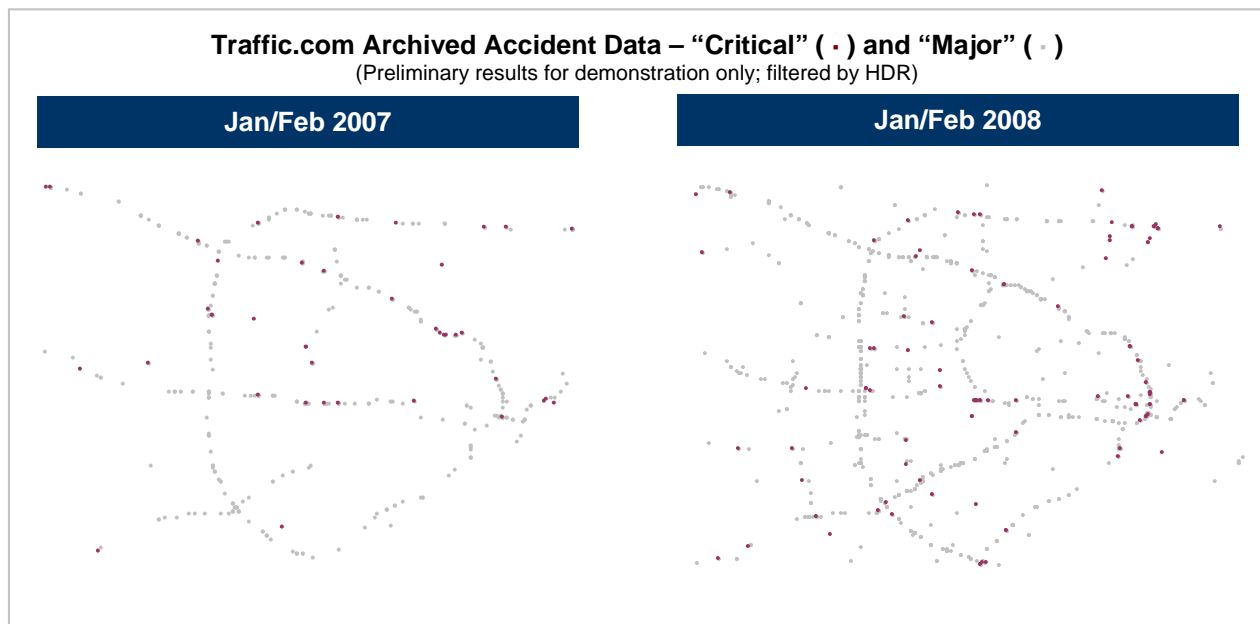
In the initial weeks of the closure, MoDOT has conducted travel-time runs on many of the local arterials (Tier 2, 3 and 4). This data set is complex, and is still under evaluation. However, the graphs at right are provided to indicate selected results. The graphs illustrate “before-and-after” travel speeds on three segments of Route 141. The southernmost segment appears to have the least change in speed, while the two northern segments may have experienced some overall speed decreases. The research team will be analyzing the data for each facility to aid in the assessment of the closure’s effects on travel speeds.



Incidents/Weather

As MoDOT’s February I-64 briefing stated, “weather played a significant factor in traffic during February with snow events on February 5, 6, 11, 12, 18, 21 and 22.” January also had a number of snow events. The research team will be identifying weather days and at least high-level correlations with travel conditions.

The maps below compare Traffic.com’s archived “critical” and “major” accident data for January/February 2008 to January/February 2007 (stored by latitude/longitude). The methodology for extracting these data still needs refinement – Traffic.com often reports a single incident multiple times, and there are other potential duplications that need to be examined. The intent of the figure is primarily to illustrate the data available, because the data itself needs further investigation. If, as the figure seems to indicate, the number of accidents increased this year in comparison to last year, it is doubtful that the closure has played a major role; a far more likely contributor is the high number of weather events. Traffic.com reporting practices may also have changed; this data will continue to be refined.



Park-and-Ride

The table below summarizes one year's worth of quarterly parking counts at MoDOT's Park-and-Ride lots in St. Louis County and neighboring counties. As the table indicates, only the aggregated Jefferson County lots have experienced a net increase in parked vehicles in February 2008 compared to February 2007. Future reports will continue to examine these trends, and will also include data from the numerous Metro transit park-and-ride lots throughout the St. Louis metropolitan area.

MoDOT Park-and-Ride Volumes

County	Lots	Total spaces	Vehicles Parked in Lot					Change Feb 07-08
			Feb07	May07	Aug07	Nov07	Feb08	
Franklin	6	413	295	205	189	175	168	- 43 %
Jefferson	11	962	321	337	379	386	367	+ 14 %
St. Charles	12	1110	427	403	283	315	301	- 30 %
St. Louis	6	792	519	540	582	451	493	- 5 %
Total	35	3277	1562	1485	1433	1327	1329	- 15 %

Transit

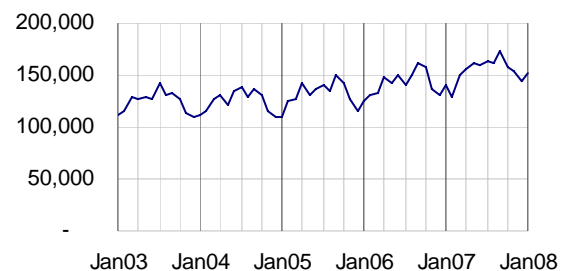
At the time of this report, Metro statistics are only available through January 2008. The table and graphs at right summarize some key statistics regarding Metro usage. Ridership on the total Metro system in January 2008 (the first month of the I-64 closure) was over 9 percent higher than ridership in January 2007. However, as the graphs indicate, Metro ridership has been steadily increasing since at least mid-2005, and the increase seen in comparing January 2008/2007 data does not appear to substantially deviate from this trend.

Statistics from the coming quarter will shed additional light on any closure-related transit trends. Future quarterly reports will examine more specifics regarding individual routes affected by the closure.

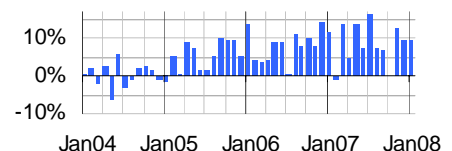
Key Transit Statistics

	Jan '08 ridership	Increase over Jan '07
MetroBus (fixed route)	2,723,970	9.1%
MetroLink (passenger rail)	1,944,205	9.4%
Call-a-Ride (paratransit)	60,167	8.4%
Total Metro system (includes services not listed)	4,733,423	9.3%

Total Metro system – equivalent daily riders per month



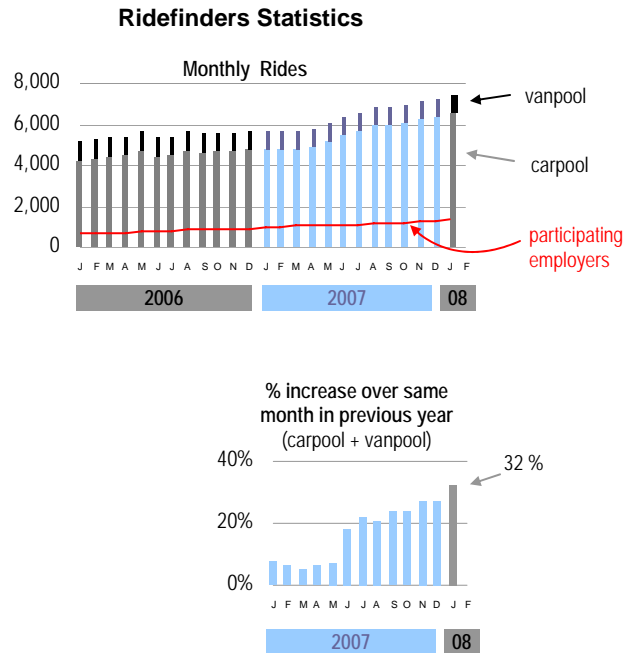
Month's increase over previous year



Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The graph at right shows historical ridership for RideFinders, and indicates a general upward trend since the second half of 2007. The lower portion of the figure further illustrates this jump in ridership by indicating, for each month, the percentage increase over the previous year. As the graph indicates, January 2008 had the highest one-year increase (32 percent) for the time period tracked.

The research team is working with RideFinders to obtain more details to help correlate rideshare activities with I-64 closure statistics.



4. Economics

Economics Highlights

The main highlight for this quarter was the development and distribution of the first business survey. The Survey was finalized and available online as of February 18th. It was distributed to over 6,000 local business sites by multiple local and regional economic development organizations; to date, 101 responses have been received. The business survey will remain active until March 13th with a second business survey planned for later in 2008. Additionally, the published economic data collection and research has identified ten major economic and demographic metrics, and catalogued the available sources. These metrics will be used to create a consistent set of economic and fiscal indicators of corridor and regional economic conditions before, during and after I-64 reconstruction. Given the time lag in available economic data indicators, this quarterly report does not include economic results for the first few months of the I-64 closure, but future reports will.

Economic Analysis Objectives and Methods

Major Goals – Economic Analysis

- Measure economic conditions before and throughout the completion of I-64
- Determine the effectiveness of the reconstruction and traffic management strategies
- Identify the strategies that are the most appropriate for near-term and long-term economic vitality

Actively tracking the economic conditions over time will permit a greater ability to communicate with local businesses and commuters throughout the reconstruction project. The level of detail the research team is pursuing will allow verification of how the closures are impacting both groups and measure these effects to inform future transportation construction projects that involve lane closures. This economic evaluation and the information obtained will help to develop strategies that sustain the regional economy as

the I-64 project concludes. Finally, these findings will help to shape national transportation policy regarding reconstruction strategies – namely, whether full closures for shorter periods are economically viable.

For this first quarter, the research team began the collection and analysis of economic data in order to create a baseline of economic conditions, and developed and distributed the first business survey of initial I-64 closure conditions. The survey will help track business indicators such as retail spending patterns, visitation, and business growth or retraction.

The major elements for the three key components of this economic assessment include:

Business Survey:

- Develop a survey instrument for both general and focused survey approaches.
- Obtain feedback; revise and finalize the survey to ensure the relevant economic indicators are included.
- Distribute the survey and follow up with partners to ensure that the survey is completed by a reasonable number of firms.
- Collect, process, interpret and present survey results.

Published Data:

- Develop an inventory of data sources, variables, frequency (monthly, quarterly, annual), and time lag.
- Meet with economic data experts at MoDOT, Department of Economic Development (DED) Missouri Economic Research & Information Center (MERIC), and other state and local agencies to discuss data availability.
- Develop a recommended set of metrics and data sources to use throughout the I-64 evaluation study.
- Develop reporting and presentation methods (tables, graphs, maps) to best track economic data indicators over time and compare to pre-construction conditions.

Benefits and costs of I-64 reconstruction and mitigation strategies:

- Estimation of highway user costs stemming from the mobility findings. Highway user costs include travel time, cost, accidents, and emissions due to changes in vehicle hours of travel (VHT), vehicle miles of travel (VMT), and variability of travel time.
- Develop methodologies to measure the effectiveness of mitigation strategies to manage traffic flow conditions during the course of the project such as estimating the difference between “predicted” highway user costs of I-64 without mitigation strategies compared to “actual” highway user costs.
- Assessment of changes in the distribution of economic activity related (directly or indirectly) to I-64 reconstruction.
- Evaluation of MoDOT’s efforts to alleviate potential impacts on local businesses through programs like Project Get Around and Mid-Metro 4. These programs encourage businesses within the affected areas to reach out to new and existing customers while providing information, including directions and promotional offers. The participation and effectiveness of these programs will be monitored periodically through the current and subsequent business surveys.

Economic Results

The following lists the current activities to date:

- Presented to MoDOT Connections Committee regarding the approach for the economic assessment, the draft business survey, and data collection plan.
- Inventoried published economic, demographic and fiscal data sources.
- Collected available published economic and demographic data.
- Met with MERIC for special zip-code-level industry employment, wage and establishment data tabulations, and have agreed upon a data-sharing agreement.
- Created the Business Survey and posted the Survey on-line.
- Worked with local and regional economic development/business organizations to distribute survey.
- Began identifying specific firms and organizations for focused, in-depth longitudinal surveys and interviews.

The next two sub-sections describe the key results of this quarter in more detail.

Business Survey

The Online Business Survey was reviewed by MoDOT, the Connections Committee, RCGA, Heartland Market Research, and others before being finalized and activated on Monday February 18th. The three distinct focus areas of the first business survey were commuting, transportation/shipping costs, and

visitation. The survey's questions were directed at the conditions just prior to the closure and the changes following the initial closure of the Western portion of I-64. Arrangements were made with local organizations to facilitate a greater number of responses. The survey was distributed to over 6,000 member business establishments via e-mail and newsletters with reminder notices urging members to participate in the online business survey. The contributing organizations are: St. Louis Regional Chamber & Growth Association (RCGA), Regional Business Council (RBC), Downtown St. Louis Partnership, Civic Progress, the St. Louis County Economic Council (SLCEC), and assorted local chambers of commerce.

Business Survey – Selected Preliminary Results (as of 2/28/08)

Total Distributed	6,000+
Total Responses	101
Respondent location (based on zip code, reported by 75%)	
City of St. Louis	50%
St. Louis County	33%
Immediate I-64 region	17%
Satisfaction w/ MoDOT execution of project	
Very satisfied	60%
Satisfied	37%
Dissatisfied	3%
Very dissatisfied	0%

The table at right summarizes some key initial statistics related to the business survey. As the table indicates 97 percent of respondents with an opinion were either satisfied or very satisfied thus far with the closure of the western portion of I-64. The current closing date for this first business survey is Thursday March 13th, 2008. A copy of the current on-line survey can be found in Appendix C.

Business Survey Next Steps:

Hard copies of the Business Survey will soon be distributed to the Forest Park Chamber so that smaller businesses will have an opportunity to participate in the survey and their responses will be entered into the survey database. Full survey response results will be assessed after March 14 and presented in upcoming progress reports. To the extent possible, the results will be compared to published economic and fiscal data indicators.

Economic and Fiscal Data Analysis

The purpose of the published data collection is to track economic indicators over the course of the I-64 Reconstruction Project and establish an economic baseline of current conditions in a manner consistent with the previous MERIC April 2006 Pre-Construction Analysis¹. The starting point for data collection was to review the data sources from the 2006 Pre-Construction analysis, and catalogue other Federal, State, County, City, and private-sector data resources. The core economic and demographic concepts selected are: employment, labor force, population, real estate trends for commercial and retail, taxable sales, and other related metrics. The main selection criteria for each data series was the frequency of publication, time lag, availability, and level of detail. The industrial and geographic detail were considered crucial as businesses will respond differently to changes in the road network based on their proximity to I-64 and the industry reliance on transportation. Based on a thorough inventory analysis of available data resources and feedback from MoDOT and MERIC, the data indicators shown in the table below have been selected to measure economic conditions before, during and after I-64 reconstruction:

Summary of Proposed Economic Statistics

Statistic	Source	Reported Interval	Reporting Lag	Geographical Unit	Level Of Detail
Employment, Wages, Establishments	MERIC	quarterly, monthly	3 mos	Zip Code, County, City	2-digit NAICS
Unemployment Rate	MERIC LAUS	monthly	3 mos	County, City	Aggregate
Population	Census	annual	2006 data	County, MSA, Census Tract	Aggregate
Taxable Sales	MoDOR	quarterly	3 mos	Zip Code, City, County	Zip Code, SIC code
Property Assessment & Tax Paid	St. Louis County MoDOR	annual	3 mos	County	Res, Non-Res, & parcel
Property Value	Assessor's office (City of SIL)	odd yrs	2 yrs	City	Res & Commercial
Building Permit Volume	NAHB	annual	1 yr	MSA	Single family, multifamily
Household Information	FFIEC	annual	3 yrs+	Census Tract	Median inc, Owner Occp,
Real Estate: Comm'l and Retail	TWR	quarterly	3 - 6 mos	Corridor, Zip Code	Industrial, Office, Comm'l

¹ "Interstate 64 Business Climate Report Pre-Construction Analysis"

To gauge the impacts from I-64 reconstruction, comparisons will be made based on: a) time series trends (before, during, after); b) county-level economic trends; and c) metropolitan area and U.S.-level macroeconomic conditions. Wherever possible, the data is collected at the zip code level and aggregated to create the following regions: the impacted sections of the I-64 corridor, St. Louis County, and St. Louis City. Detailed descriptions of each series are discussed below:

Employment, Wage, and Establishment Statistics

The “Quarterly Census of Employment and Wages” (QCEW) dataset is compiled by MERIC covering employment, wages, and the number of establishments by industry. It is publicly available at the county level. Specific to this evaluation study and the need to track sub-county corridor-level conditions, the research team has reached agreement with MERIC to create custom tabulations of the QCEW at the zip-code level for the two-digit NAICS industries. The standard QCEW has few data suppressions at both the City and County level. The most recent release for both St. Louis County and St. Louis City is the Second Quarter of 2007.

Unemployment Rate, Labor Force

MERIC’s Local Area Unemployment Statistics (LAUS) covers labor force and subsequent unemployment rates for each county, city, and MSA within the state. These estimates are derived from historical data, the CES program, and the Unemployment Insurance System (UI). The data is reported monthly for all geographical areas including the U.S. as a whole. The last reported month was November 2007. The LAUS dataset is preferred to National data sources, as MERIC reports this information directly to the Bureau of Labor Statistics (BLS) for their unemployment estimates.

Population

The population estimates program by the U.S. Census Bureau publishes demographic data for the nation, state, cities, and towns. Estimates for the total population are available for both the City and County up to 2006; these estimates were released in March 2007. The reference date for all census estimates is always July 1st. Census population data and estimates are the most commonly cited and available demographic data for the US. With each new July 1st release, the Census Bureau revises previous historical estimates. The population data to date has been collected.

Taxable Sales

Missouri Department of Revenue (MoDOR) reports Quarterly Taxable Sales by zip code (currently available up to and including the third quarter of 2007) and is a particularly good data source to track consumer/retail spending and overall economic activity at a detailed geographic level. The Taxable Sales by City dataset also separates taxable sales for each individual industry via the Standard Industrial Codes (SIC). Since 1997, most have adopted the North American Industrial Classification System (NAICS) classifications for reporting business related economic data, which will present a minor challenge as MoDOR’s data is still tabulated using the older SIC classifications. Comparing the taxable sales data by zip code with the geographic detail will allow us to see the direct sales impacts on the I-64 Corridor.

Real Estate: Property Assessment, and Taxes

The “I-64 Business Climate Report: Pre-Construction Analysis” used a custom tabulation provided by the Torto Wheaton Research Group (TWR). TWR data included annual estimates for industrial building gross rental asking, availability, net absorption, and stock for St. Louis City, St. Louis County, and the I-64 Corridor. The TWR data is a fee-based service and HDR is determining the number of custom data updates that will be required. Alternative and supplemental data sources start with the City of St. Louis Assessor’s office, which assesses city property every other year. At the national level, the National Association of Homebuilders (NAHB) reports the volume of building permits for single and multi family units. Additionally, the City and County Department of Revenue (DOR) respond to specialized data

requests. Lastly, the St. Louis County Department of Revenue and Assessor's office reports and collects property assessments by each individual parcel.

Household information:

Timely data to track housing sales and prices at the county and sub-county level is not readily available. The following data sources could be used but all present limitations:

- The Federal Financial Institutions Examination Council (FFIEC) collects and reports general information on median family income and population by census tract for each MSA. The data for 2007 is estimated from 2003 data and is reported once every three years; thus, the major disadvantage of this dataset is the reporting lag and the lag period for the underlying data that drives these estimates.
- The Census Bureau's American Community Survey (ACS) has similar demographic and household data estimates for 2006, but at the county and city level. The ACS data can supplement intermittent releases of the FFIEC.
- The National Association of Realtors provides more frequent data on median home prices, but at the metropolitan statistical area level (for St. Louis that means multiple counties in Missouri and Illinois) and are thus not particularly useful for this evaluation.

Geographic Area:

Once the index of available data sources was created, the geographic study area was defined. Based on the available data, the research team determined that the analysis will be from the "bottom up" using detailed zip-code-level data to create the I-64 corridor. The map at right illustrates the zip code definitions for each region, including those composing the I-64 Corridor.

Economic and Fiscal Data Analysis, Next Steps: Starting this summer, MERIC will provide the zip code level economic data and thus the baseline will be constructed from the point where MERIC's Pre-Construction analysis left off (the first quarter of 2005), continuing forward throughout the reconstruction period. The economic indicators will be standardized to create periodic quarterly updates tracking conditions from pre-construction through completion.

Conclusion

The Business survey was successful in soliciting responses from the local community and interim results verify that a majority of businesses are satisfied with MoDOT's initial performance during the I-64 closure. In addition, the sources of published economic data have been determined for collection throughout the project along with the necessary agreements with MERIC to produce a custom data set at the zip code level for the economic analysis. Future reports will include a detailed analysis of the first business survey and preliminary analysis of the published economic data.

Zip Code Definitions for Study Regions



5. I-64 Traffic Response

I-64 Traffic Response Highlights

Major Goals – I-64 Traffic Response Assessment

Assess benefit/cost of the current I-64 Traffic Response deployment (arterials)

Assess value of continuing future arterial highway service patrol efforts

Develop white paper that provides a sustainable approach to consideration of future arterial highway service patrols

The main highlight for this quarter was the development and distribution of the I-64 Traffic Response survey instrument (see Appendix A) that is provided during each assist performed. This survey instrument will provide information from motorists receiving these services, including information on location, response/wait time, services provided, the professionalism with which services were provided, and the user opinion on the value of

the services. Additional questions on the I-64 project were also included to help gauge users' opinions on the I-64 project and to connect these services with the I-64 project. The survey form identifies the sponsors, and provides information on the regional traveler information systems (511 and Gateway Guide). Thirty-eight (38) completed surveys were received during the first two months.

I-64 Traffic Response Objectives and Methods

This assessment will utilize information collected from transportation users, I-64 Traffic Response/Motorist Assist staff, previous research/study efforts, and the mobility assessment component to establish the benefit/cost of the program. This information will then be used to forecast future value of continuing regional arterial highway service patrol efforts. The assessment will explore the following potential expanded arterial highway service patrol alternatives:

- Expanded services only during major or roadway closure construction activities
- Continuous services along major regional arterial corridors
- Limited-response services along major arterial corridors by expanding the region's Motorist Assist Program and the utilization of the region's integrated management and operation system

A white paper will be developed by June 2009 that will outline a sustainable approach regarding when regional arterial highway patrol services should be considered. This deliverable will provide the region the time necessary to fund and implement desired recommendations.

I-64 Traffic Response Results

MoDOT performs service patrol activities where operators travel busy highways and provide assistance at incident sites for stranded motorists and crashes. By quickly helping to resolve problems, this program increases the safety and mobility of all motorists in the area. MoDOT's Motorist Assist program concentrates on the interstates, and I-64 Traffic Response sponsored by St. Louis County covers major arterial roads such as Manchester Road and Olive Boulevard. Starting on January 2, 2008 – the day of the closure – these programs' operators began distributing surveys to those they assisted to obtain feedback about operator performance, and as another method to learn how the closure is impacting motorists. Responses indicate that motorists are very satisfied with operator performance, and their closure responses were similar to those obtained in the web and mail studies. Specifically, 89 percent were satisfied with the decision to close parts of I-64 for two years instead of taking six to eight years to otherwise finish reconstruction. Likewise, 89 percent of the respondents were also satisfied with how well they were managing to move around the St. Louis area since the closure. The distribution and receipt of surveys will continue throughout the study period with monthly and quarterly updates being made.

Appendix

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Appendix A Project Communication

Appendix B Mobility (future)

Appendix C Economics

Appendix D I-64 Traffic Response (future)

Appendix A: Project Communication

A1 Mail Out Survey

A2 Online Survey

A3 Interview Survey

A4 Freeway Motorist Assist Survey

A5 I-64 Traffic Response Survey

A1 Mail Out Survey

Dear Resident,

Please help us. Heartland Market Research LLC has been hired by MoDOT to survey the general public about your opinions regarding the New I-64 Project. Most of the questions on this survey specifically relate to the project closure of I-64 (Highway 40) between Ballas Road and I-170 for construction improvements.

Our only interest in the project is to provide accurate information about what you think, so please respond as accurately and completely as possible. The survey should take less than 5 minutes to complete, and you can return the survey to us in the enclosed postage paid envelope.

If you have any questions about the survey, please call me directly at (573) 578-5423. If you have any questions about the New I-64 Project you may call MoDOT at (888) ASK-MODOT or visit www.thenewi64.org.

Thank you,

Lance Gentry
Principal Investigator, Heartland Market Research LLC

MARKING INSTRUCTIONS

- Use pencil or a blue or black ink pen.
- Make no stray marks on this form.
- Completely fill in the appropriate ovals.

CORRECT: ● INCORRECT: ☒ ☐ ☐ ☐

Customer Survey about the New I-64 Project

1. Please indicate your agreement (or disagreement) with the following statements about how the New I-64 (Highway 40) Project closure between Ballas Road and I-170 has impacted you.

	strongly agree	agree	disagree	strongly disagree	no opinion
the closure has changed where I shop	++	+	-	--	?
the closure has changed where I buy gas	++	+	-	--	?
the closure has changed where I bank	++	+	-	--	?
the closure has changed where I eat out	++	+	-	--	?
the closure has changed how often I travel to certain areas	++	+	-	--	?
the closure has changed where I work	++	+	-	--	?
the closure has changed where I live	++	+	-	--	?

2. Has the project closure of this section of I-64 changed your work habits? (Mark all that apply)

- ☐ No - I still work the same hours in the same location as I did before the closure
- ☐ Yes - My hours have shifted
- ☐ Yes - I now work from another location (home, another office, etc.) more often
- ☐ Yes - I quit my job and accepted one somewhere else
- ☐ Yes - Other

3. Please indicate your level of satisfaction with:

	very satisfied	satisfied	dissatisfied	very dissatisfied	no opinion
How well the public has been kept informed about the New I-64 Project?	++	+	-	--	?
The timeliness of the New I-64 Project information being made available?	++	+	-	--	?
How alternative travel options have been communicated?	++	+	-	--	?
The traffic flow within construction work zones (other construction where you may travel)?	++	+	-	--	?
How understandable and accurate are the construction work zone signs?	++	+	-	--	?
How well you are managing to move around the St. Louis area with the New I-64 Project closure?	++	+	-	--	?
The decision to complete the work by closing I-64 for 2 years instead of taking 6 to 8 years with lane closures?	++	+	-	--	?
Your overall level of satisfaction with how the New I-64 Project closure has been handled?	++	+	-	--	?

Please complete both sides of the survey.

☐ ☐ ☐ ☐ ☐

<input type="checkbox"/> TV News	<input type="checkbox"/> Receive information in mail (newsletter, etc.)	<input type="checkbox"/> Word of Mouth (a friend tells me)
<input type="checkbox"/> Radio News	<input type="checkbox"/> Project email from MoDOT or I-64 Team	<input type="checkbox"/> Work
<input type="checkbox"/> Radio Talk Shows	<input type="checkbox"/> Project display boards at public gatherings	<input type="checkbox"/> Call 1-888-ASK-MODOT
<input type="checkbox"/> Newspapers	<input type="checkbox"/> Road signs on other roads	<input type="checkbox"/> Call 511
<input type="checkbox"/> Internet sites	<input type="checkbox"/> Road signs when I head toward the closed highway	<input type="checkbox"/> Other

5. In a typical week before the New I-64 Project closure (before January 2, 2008), how often did you commute in the following ways? (Count round trips twice)

	never	per week	per week	weekdays	every day
Driving alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving with multiple people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding the bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding MetroLink (light rail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Telecommuting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. In a typical week after the New I-64 Project closure (after January 2, 2008), how often do you commute in the following ways?
(Count round trips twice)

Driving alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving with multiple people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding the bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding MetroLink (light rail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Telecommuting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. In a typical week before the New I-64 Project closure (before January 2, 2008), how often did you travel on the closed section of I-64 (Highway 40)? Please count round trips twice.

8. Please indicate how long it takes you to make most trips now compared to how long it took you before the New I-64 Project closure (compared to before January 2, 2008).

The following questions are asked because we need to make sure we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

Demographic Questions

11. Fill in the zip code of where you most frequently drive *other than where you live*. For most people this will be your work zip code.

Zip Code

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]

A2 Online Survey

Welcome to the I-64 Survey

We appreciate your time and interest in sharing your opinion. This information is being collected, summarized, and reported to the Missouri Department of Transportation (MoDOT) to help them serve you better. We (Heartland Market Research LLC and HDR Inc) are independent contractors who have been hired to collect this information and provide it to MoDOT. Our only interest in this project is to provide accurate information about what you think, so please respond as accurately and completely as possible.

Most of the questions in this survey relate to the closure of I-64 (Highway 40) and how this impacts you. On January 2, 2008, I-64 was closed in both directions between Ballas Road and I-170 for construction improvements.

Survey. **In consideration of both your time and interest in the subject, you can choose the length of your survey.**

- ☐ Brief Survey (2 to 5 minutes)
- ☐ Medium Survey (4 to 8 minutes)
- ☐ Detailed Survey (6 to 10 minutes)

The questions on this survey will change periodically. Right now we are on our first set of questions. You are welcome to return and take the survey again when we change the questions (approximately every other month).

Repeat. **Have you taken this survey before?**

- ☐ No
- ☐ Yes
- ☐ I'm not sure

Personal Impact of Closure

Impact1. **Please indicate your agreement (or disagreement) with the following statements about how the closure of I-64 (Highway 40) between Ballas Road and I-170 has impacted you?**

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
The closure has changed where I shop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed where I buy gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed where I bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed where I eat out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed how often I travel to certain areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed where I work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The closure has changed where I live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact2. **Has the closure of this section of I-64 changed your work habits?**

(Mark all that apply)

- ☐ No - I still work the same hours in the same location as I did before the closure
- ☐ Yes - My hours have shifted
- ☐ Yes - I now work from another location (home, another office, etc.) more often
- ☐ Yes - I quit my job and accepted one somewhere else
- ☐ Yes - other

Impact3. **If you answered other above and/or if you want to provide more details about how the closure has affected you, please do so here.**



Alternative Routes

Alt1. For those who wish to travel near the closed part of I-64 (Highway 40), a recent newspaper article mentioned five alternative routes in addition to the two interstate options. Please provide your thoughts about each one.

	I have not tried this alternative yet	I have tried this alternative and would recommend it to others	I have tried this alternative and would <i>not</i> recommend it to others
Manchester Road	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clayton Road	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ladue Road	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Olive Boulevard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Page Avenue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I-44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I-70	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Alt2. If you have tried other alternatives, please describe them along with any suggestions that might improve them.

Your Opinion

Satisfaction1. **Please indicate your level of satisfaction with the following:**

	Very Satisfied	Satisfied	No Opinion	Dissatisfied	Very Dissatisfied
--	----------------	-----------	------------	--------------	-------------------

How well the public has been kept informed about the New I-64 Project?



The timeliness of the information being made available?



How alternative travel options have been communicated?



The traffic flow within construction work zones (other construction where you may travel)?



How understandable and accurate are the construction work zone signs?



How well you are managing to move around the St. Louis area with the closure of I-64?



The decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?



Your overall level of satisfaction with how the I-64 closure has been handled?



[NOTE: Brief Survey skips to last page after this question]

Closure

Awareness1. **Before coming to this survey, did you know that the section of I-64 (Highway 40) between Ballas Road and I-170 would be completely closed for 2008?**

- ☐ Yes
- ☐ No

Awareness2. **When did you learn that I-64 was going to be closed between Ballas Road and I-170?**

- ☐ January 2008
- ☐ December 2007
- ☐ Before December 2007
- ☐ I'm not sure

SatCheck. **The alternative to closing parts of I-64 (Highway 40) for two years was to have ongoing construction for 6 to 8 years. This would have resulted in having various lanes closed to traffic until at least 2014 and possibly through 2016. This alternative would have also cost many million dollars more. Considering the alternative, how satisfied are you with the decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?**



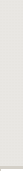

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ No Opinion
- ☐ Dissatisfied
- ☐ Very Dissatisfied

Feedback

Feedback. **What is the best way for MoDOT to get information to you about road improvements and other road and bridge information? (Mark all that apply)**

- ☐ TV News
- ☐ Radio News
- ☐ Radio Talk Shows
- ☐ Newspapers
- ☐ Internet Sites
- ☐ Receive information in mail (newsletter, etc.)
- ☐ Project email from MoDOT or I-64 Team
- ☐ Project display boards at public gatherings
- ☐ Road signs when I was headed toward the closed highway
- ☐ Road signs on other roads
- ☐ Word of Mouth (a friend tells me)
- ☐ Work
- ☐ Call 1-888-ASK-MODOT
- ☐ Call 511
- ☐ Other

Feedback2. **Please use this space to provide additional detail about how MoDOT could best provide you with information.**

	   
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Internet *[Only Seen if Internet Completed on Previous Page]*

Internet1. **On the previous page, you indicated that the internet was a good way to get information to you. Please indicate which site(s) that you visit.**

(Mark all that apply)

- ☐ GatewayGuide.com
- ☐ MoDOT's website (MoDOT.org and/or MoDOT.gov)
- ☐ The New I-64 site (TheNewI64.org)
- ☐ Metro (MetroStLouis.org)
- ☐ Post 4 Traffic Online (post4trafficonline.com)
- ☐ DontGetStuck.org
- ☐ KMOV.com (Channel 4)
- ☐ KDSK.com (Channel 5)
- ☐ KTRS.com (AM 550)
- ☐ STLToday.com (Post-Dispatch)
- ☐ Other

InternetOther. **If you heard about the closure through one or more sites not listed above, please tell us which site(s).**

	   
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The New I-64 Site (TheNewI64.org) *[Only seen if site chosen on Previous Page]*

I64Site1. **What information on the I-64 Project website do you find most useful?**

- ☐ Construction Zone (Ongoing Closures)
- ☐ Traffic Impacts (Today's Closures)
- ☐ Newsroom
- ☐ Project Overview
- ☐ Web cams and/or Photo Gallery
- ☐ Commuter Alternatives (Transit/Carpooling Options)
- ☐ None of the Above

I64Site2. **What information would you like to see on the I-64 Project website?**



Before the Closure*[Only seen by detailed survey respondents]*

Before1. **Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.**

	Not applicable or I don't know	Faster than before	Same time as before	0 to 5 minutes longer than before	5 to 15 minutes longer than before	15 to 30 minutes longer than before	More than 30 minutes longer than before
Education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment or Work Related	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medical Reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping, Recreation, and/or Entertainment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traveling Through the St. Louis Region	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Before2. **In a typical month before the closure, how often did you travel on this section of I-64 (Highway 40) in the following ways?**

	Never	A few times	Once a week	Twice a week	Most weekdays	Almost every day
Driving alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving with multiple people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding the bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[If all three "Never"s are selected, skip to page 1 of Demographics]

Before the Closure, Page 2

Before3. **In a typical month before the closure, what times did you travel on this section of I-64 (Highway 40)?**

If this was part of a round trip, please includes both parts of the trip.

- ☐ Before 7:00 AM
- ☐ Between 7:00 AM and 9:00 AM
- ☐ Between 9:00 AM and 3:00 PM
- ☐ Between 3:00 PM and 6:00 PM
- ☐ After 6:00 PM

After the Closure

After1. **In a typical month after the closure, how often did you travel to the same destinations that you previously reached via the closed section of I-64 (Highway 40) in the following ways?**

	Never	A few times	Once a week	Twice a week	Most weekdays	Almost every day
Driving alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driving with multiple people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riding the bus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riding MetroLink (light rail)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After2. **In a typical month after the closure, what times did you travel to the same destinations that you previously reached via the closed section of I-64 (Highway 40)?**

If this was part of a round trip, please includes both parts of the trip.

- ☐ Before 7:00 AM
- ☐ Between 7:00 AM and 9:00 AM
- ☐ Between 9:00 AM and 3:00 PM
- ☐ Between 3:00 PM and 6:00 PM
- ☐ After 6:00 PM

Demographics *[Page 1 of Demographics not seen by Brief Respondents]*

These questions are asked because we need to make sure that we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

Gender. **Are you male or female?**

- ☐ Male
- ☐ Female

AgeGroup. **Please choose your age group**

- ☐ Under 16
- ☐ 16 to 25
- ☐ 26 to 40
- ☐ 41 to 65
- ☐ Over 65

Income. **What was your approximate *household* income in 2007?**

- ☐ Less than \$20,000
- ☐ \$20,000 to \$40,000
- ☐ \$40,001 to \$60,000
- ☐ \$60,001 to \$90,000
- ☐ \$90,001 to \$120,000
- ☐ \$120,001 to \$150,000
- ☐ \$150,001 to \$200,000
- ☐ More than \$200,000
- ☐ I do not know

These questions are asked only to make sure we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

Zip. **We are interested in traffic flows. It would help us a lot if you could tell us two zip codes. If you are not sure, just leave them blank.**

What is your home zip code? (where you are currently living)

What is your work zip code? (if you go to school, please enter your school zip code. If you do not otherwise work, please leave blank).

Ethnic. **To what ethnic groups do you belong? (Mark all that apply)**

- ☐ American Indian
- ☐ Asian
- ☐ Black or African-American
- ☐ Hispanic or Latino
- ☐ White or Caucasian
- ☐ Other

[Submit Survey](#)

A3 Interview Survey

Draft Interview Survey Questions

2/5/2008

Good morning/afternoon, my name is _____. I am part of a team conducting an independent assessment of the New I-64 project. Do you have time for me to ask you a few short questions?

1. In a typical week before the closure, how often did you travel on the closed section of I-64 (Highway 40)?

☐ Never ☐ Two to three times a week
☐ Very rarely ☐ Most weekdays
☐ Once a week ☐ Almost every day

2. Has the closure caused you to use new routes? If so, which ones?

Manchester Road (100)		I-44		I-170	
Clayton Road		I-55		I-270	
Ladue Road		I-70			
Olive Boulevard (340)		Other:			
Page Avenue (D)		Other:			

Now please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statements.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
3. The closure has changed how often I travel to certain areas					
4. The closure has changed how often I travel overall					
5. The closure has caused me to combine my trips more often					
6. The closure has changed where I spend my money					
7. The closure has changed my work schedule, location, or habits					

If strongly agree on 6 or 7 above, ask how? (see ✓ boxes on next pg)

8	Shop closer to home
	Spend less money
	Shop less often
	Shop in _____
	Other: _____

9	Flextime
	Other changed hours: _____
	Work from another location
	Telecommute / Work from home
	Changed job: Explain _____
	Other: _____

Great! Now I have a series of satisfaction questions for you. For each, please tell me if you are very satisfied, satisfied, dissatisfied, very dissatisfied, or if you don't have an opinion.

How satisfied are you with ...	Very Satisfied	Satisfied	No Opinion	Dissatisfied	Very Dissatisfied
10. How well the public has been kept informed about the New I-64 Project?					
11. The timeliness of information on the project?					
12. How alternative travel options have been communicated?					
13. How well you are managing to move around the St. Louis area with the closure of I-64 / Highway 40?					
14. The decision to complete the work by closing I-64 for 2 years with cost savings instead of taking 6-8 years with lane closures?					
15. Your overall level of satisfaction with how the I-64 closure has been handled?					

16. Now I have a travel related question. Please tell me what types of trips you make most often and about how much longer or shorter they are compared to before the closure. (Give example if necessary)

	N/A or I don't know	Shorter	Same	Somewhat Longer 0 to 20 min	Much Longer > 20 min
Commute					
Other Work Related Trips					
Education					
Medical					
Shopping					
Recreation or Entertainment					
Traveling to Downtown					
Other:					

Now I have a few questions where I would like you to compare how you traveled before and after the closure. Please tell me if the closure has increased, decreased or not affected how often you ...

	Increased	Decreased	No Change
17. Drive with multiple people			
18. Ride the bus			
19. Ride MetroLink (light rail)			
20. Walk or Bike			
21. Telecommute			

22. What is the best way for MoDOT to get information to you about road improvements and other road and bridge information?

- (Mark all that they list)
- ☐ TV News
 - ☐ Radio News
 - ☐ Radio Talk Shows
 - ☐ Newspapers
 - ☐ Internet Sites (list specific sites if give) _____
 - ☐ Receive information in mail (newsletter, etc.)
 - ☐ Project email from MoDOT or I-64 Team
 - ☐ Road Signs
 - ☐ Dynamic (variable) message signs
 - ☐ Billboards
 - ☐ Word of Mouth (a friend tells me)
 - ☐ Work Sources
 - ☐ Call 1-888-ASK-MODOT
 - ☐ Call 511
 - ☐ Other: _____

In order to make sure we get adequate geographic representation and because we are interested in traffic flows, it would be very helpful if you could provide us with your home zip code and your work or school zip code.

23. _____ home zip code 24. _____ work / school zip code

25. Do you have any other comments you would like to convey to MoDOT or the I-64 Team? (Write comments on comment sheet.)

Date, Time & Demographics (DO NOT ASK – interviewer to fill out)

26. Date: ____/____/2008 27. Time: ____: ____

28. ____ Male ____ Female

Observer's opinion regarding:

29. Age group
 ____ 15 to 25 ____ 26 to 40 ____ 41 to 65 ____ Over 65

30. Ethnicity

- ☐ American Indian
- ☐ Asian
- ☐ Black or African-American
- ☐ Hispanic or Latino
- ☐ White or Caucasian
- ☐ Other
- ☐ Unknown

A4 Freeway Motorist Assist Survey



Motorist Assist Missouri Department of Transportation

This Motorist Assist service was provided to you because of your fuel and license tax contributions. **The driver will not accept cash or gratuity.**

Anyone wishing to provide a donation for this service may do so by check or money order made payable to:

Director of Revenue Credit State Road Fund

PLEASE DO NOT SEND CASH!!

A huge contribution to our Motorist Assist program would simply be your opinions and comments. Please answer the questionnaire on the reverse side and mail it in the self-addressed stamped envelope. Each and every questionnaire is read, documented and used to improve this service for you and your community.

Your feedback is crucial for the continued existence of the Motorist Assist program!

Thank you!!

www.MoDOT.gov



Motorist Assist Customer Survey

To help us serve you better, please complete and return this survey

or

please complete the survey at www.HMRLLC.US/assist.htm

MARKING INSTRUCTIONS

- Use a No. 2 pencil or a blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the response completely.
- Make no stray marks on this form.

CORRECT: ● INCORRECT: ✓ ✗ ○ ●

1. Location

- ☐ I-44 ☐ I-55
☐ I-64 ☐ I-70
☐ I-170 ☐ I-255
☐ I-270 ☐ Other: _____

2. Operator

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

3. How long were you pulled over before Motorist Assist arrived (in minutes)?

- ☐ Less than 5 ☐ 5-10 ☐ 10-20 ☐ 20-30 ☐ 30-40 ☐ More than 40

4. Was this wait time acceptable? ☐ Yes ☐ No ☐ No opinion

5. What kind of service was provided? (Mark all that apply)

- ☐ Tire ☐ Mechanical ☐ Fuel/Fluid ☐ Transported ☐ Phone ☐ Other

6. Please rate your satisfaction with your Motorist Assist operator on the following items, using the scale provided.

	Very Satisfied	Satisfied	Neither	Dissatisfied	Very Dissatisfied
a. Safe procedures	++	+	N	-	--
b. Professionalism	++	+	N	-	--
c. Courtesy	++	+	N	-	--
d. Knowledge	++	+	N	-	--
e. Overall effectiveness	++	+	N	-	--

7. Do you believe the Motorist Assist service is valuable?

- ☐ Definitely ☐ Probably ☐ Probably Not ☐ Definitely Not

8. Additional comments about the Motorist Assist program or operator (Please only write within the thick lines)

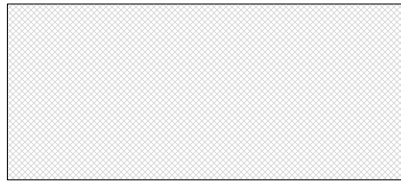
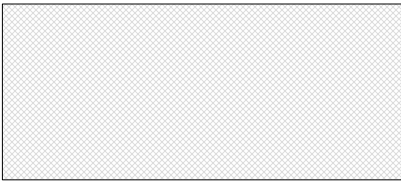
9. This question concerns the New I-64 improvement project. For each part, please say whether you are very satisfied, satisfied, dissatisfied, or very dissatisfied?

How satisfied are you with...

- ...how well you are managing to move around the St. Louis area with the closure of I-64.
...the decision to close I-64 to allow construction to be completed in 2 years instead of 7 years.

	very satisfied	satisfied	dissatisfied	very dissatisfied	no opinion
...how well you are managing to move around the St. Louis area with the closure of I-64.	++	+	-	--	?
...the decision to close I-64 to allow construction to be completed in 2 years instead of 7 years.	++	+	-	--	?

A5 I-64 Traffic Response Survey

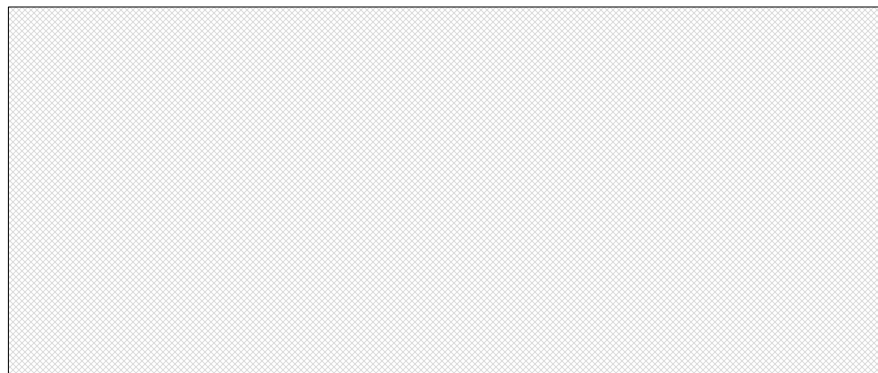


I-64 Traffic Response Missouri Department of Transportation

The New I-64 Traffic Response service is provided to you in efforts to relieve congestion during the I-64 Project. **The driver will not accept cash or gratuity.**

For assistance or in case of emergency dial 911

A huge contribution to our Traffic Response program would simply be your opinions and comments. Please answer the questionnaire on the reverse side and mail it in the self-addressed stamped envelope. Each and every questionnaire is read, documented and used to improve this service for you and your community.



For Travel Information

Thank you!
www.GatewayGuide.com

Appendix B: Mobility

Reserved for Quarter Mobility Data
No Data This Quarter

Appendix C: Economics

C1 Business Survey

BUSINESS STUDY: NEW I-64 ECONOMIC AND REGIONAL MOBILITY

Welcome! This business survey is part of an *independent* evaluation study commissioned by the Missouri Department of Transportation. There are three focus areas – commuting, transportation & shipping costs, and sales & visitation. This survey is intended to obtain important information about the economic implications of the full-closure of I-64 on the local and regional economy.

Thank you for agreeing to participate. **The overall survey results will be summarized in a public report, but your individual data will not be released.**

At the end of the survey, you will have the opportunity to ask for a free copy of our report.

Satisfaction

How would you rate your organization's overall satisfaction with MoDOT's execution and delivery of the New I-64 Reconstruction Project?



Very Satisfied



Satisfied



No Opinion (neither satisfied nor dissatisfied)



Dissatisfied



Very Dissatisfied

Organization Background

Please select the industry that best fits your organization.

How many years has your organization been at its current location?

☐

Less than 2 years

☐

Between 2 and 5 years

☐

Between 5 and 10 years

☐

More than 10 years

How many people are employed by your business at your location?

☐

10 or fewer

☐

11 to 25

☐

26 to 100

☐

101 to 250

☐

More than 250

Please estimate what percent of the employees at your location commuted on the closed section of I-64 before January 2008.

☐

0% - 25%

☐

26% - 50%

☐

51% - 75%

☐

76% - 100%

Commuting

Since the closure of I-64: how frequently do your EMPLOYEES use the following alternative routes?

	Frequently	Sometimes	Never
Manchester Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Park Parkway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clayton Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladue Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olive Boulevard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page Avenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-44	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell us approximately how close your organization is located to the closed sections of I-64.

in miles (0 to 99)

Commuting, Part II

Please indicate your agreement (or disagreement) that the alternate routes provide reasonable access compared to before the closure of I-64.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

**How has the closure of I-64 affected employee behavior for your organization?
(select all that apply)**

- ☐ Noticeably Earlier Commute Times
- ☐ Noticeably Later Commute Times
- ☐ Shorter Total Working Hours
- ☐ Longer Total Working Hours
- ☐ No Noticeable Changes
- ☐ Increased Employee Turnover

**Since the closure of I-64, has your organization offered any new benefits to accommodate changes in commuting?
(select all that apply)**

- ☐ Flextime
- ☐ Encouraged Car/Van Pools
- ☐ Private Shuttles to Public Transit Access Points
- ☐ Subsidized Public Transit Passes: (Bus, Lightrail)
- ☐ Alternate Work Locations
- ☐ Telecommuting
- ☐ Other

Transportation and Shipping Costs

Choose the one(s) that best describes the relationship of your business use of I-64 prior to the closure:

- ☐ Shipped and Received Products on I-64
- ☐ Employees Used I-64 to Commute
- ☐ Patients Used I-64 to Reach Your Location
- ☐ Clients Used I-64 to Reach Your Location
- ☐ Customers Used to Reach Your Location
- ☐ Visitors Used to Reach Your Location

If you ship or receive goods, what percent of shipments travel on I-64?

Before I-64 Closure (0 to 100)

Currently (After) I-64 Closure (0 to 100)

Have transportation costs, excluding fuel costs, increased since I-64's closure?

- ☐ Strongly Agree
- ☐ Agree
- ☐ Disagree [\[Goto question Sales11\]](#)
- ☐ Strongly Disagree [\[Goto question Sales11\]](#)

Increased Transportation and Shipping Costs

You indicated that transportation costs have increased since the closure of I-64.
Have any of the following factors helped raise your transportation costs?

	Significant Increase in Cost	Minor Increase in Cost	No Change	Minor Decrease in Cost	Significant Decrease in Cost
Freight Shipping Cost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased Travel Time and Delay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less Reliable Shipments and Travel Time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you answered other, please explain.

Sales and Visitation

Since the closure of I-64: how frequently do your VISITORS, CLIENTS, or PATIENTS use the following alternative routes?

	Frequently	Sometimes	Never
Manchester Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Park Parkway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clayton Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladue Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olive Boulevard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page Avenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-44	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Weekly Volume of People

Has there been a noticeable change in the weekly volume of visitors, customers, or patients to your organization since the closure of sections of I-64?

☐

Yes: Lower volume than before the closure

☐

Yes: Higher volume than before the closure

☐

No

☐

Not relevant for my organization

If you replied yes above, please estimate the *weekly* change in visitors, customers, or patients seen by your organization since the closure.

Weekly Number Change (please provide your best estimate **as a number**)

Weekly Percentage Change (please provide your best estimate **as a percentage**)

Have traffic disruptions attributable to I-64's closure impacted your business in any other way?

Weekly Sales Volume

Has there been a noticeable change in weekly business sales (for this time of year) since the closure of sections of I-64?

☐

Yes: Lower volume than before the closure

☐

Yes: Higher volume than before the closure

☐

No

☐

Not relevant for my organization

If you replied yes above, please estimate the weekly change in sales seen by your organization since the closure.

Weekly Sales Change (please provide your best estimate **as a number**)

Weekly Sales Change (please provide your best estimate **as a percentage**)

Promotional Programs

MoDOT has issued nearly \$1 million in business outreach grants to help local businesses during I-64 reconstruction. Has your organization participated in these business access promotional programs?

☐

Yes

☐

No

If yes, please describe the effectiveness of these efforts.

Location

Has the location of your facilities and operations changed due to the closure of I-64?



Yes



No

If yes, please elaborate.

Future Decisions

Will your future decisions about new investment, expansion or location of your facilities and operations be impacted by the closure of I-64?



Yes



No

If yes, please elaborate.

Data Collection

Do you collect employee or client/patient/customer travel origin data?

- ☒ Yes
☐ No

If you answered yes above, may we contact you about potentially sharing travel origin data?

- ☒ Yes
☐ No

Would you be willing to respond to semi-annual surveys or interviews to help support the economic assessment of I-64's reconstruction?

- ☒ Yes
☐ No

**If you are willing to help, how should we contact you?
(select all that are acceptable to you)**

- ☐ Email
☐ Mailed Survey
☐ Telephone

On the next page, you will be given the opportunity to provide your contact information.

Last Page of Questions

This information is vital toward helping us understand the economic impact of the New I-64 project in specific areas. Your individual information will remain confidential; only summary statistics and findings will be published in the report. We especially need the information that is in bold.

Name

Email

Organization Name

Address

Zip Code

Phone

Would you like us to email you a copy of our report? (In order to receive the report, you must answer yes to this question and provide your email address in the previous question).

☐

Yes

☐

No

Submit Survey

Appendix D: Traffic Response

Reserved for Quarter Traffic Response Data

No Data This Quarter

The New I-64 Economic and Regional Mobility Study

Quarterly Report # 2

March – May 2008

HDR

Before the Closure

Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.

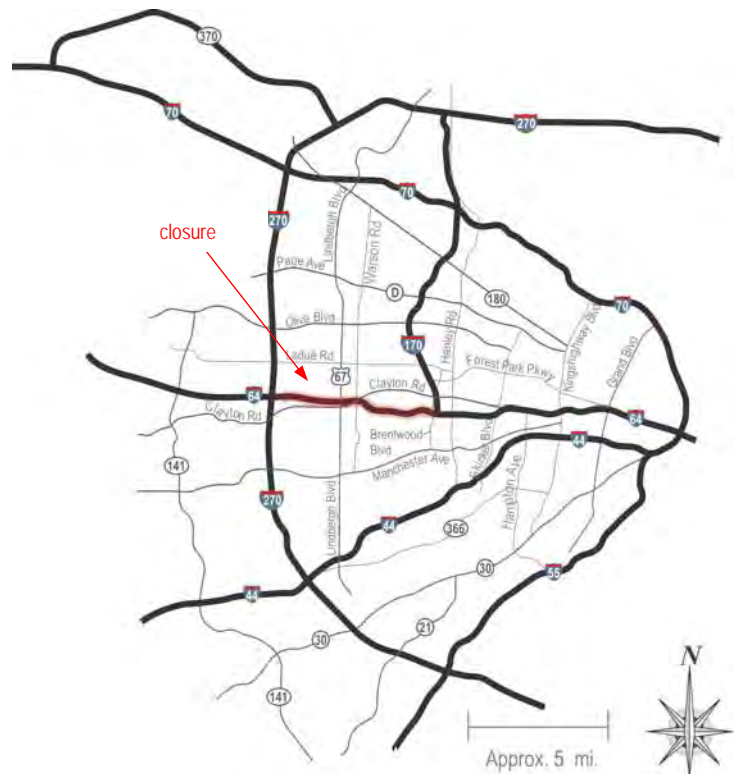
	Not affected at all (0 to 1)	Some extra time (2 to 4)	More extra time (5 to 9)	10 to 15 minutes extra (10 to 15)	15 to 30 minutes extra (15 to 30)	More than 30 minutes (30 to 60)
Commuting to and from work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Visits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping, errands, school, recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traveling throughout St. Louis Region	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1. Executive Summary

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (see map) was completely closed for construction. The closure is planned to last through the end of 2008, at which time a section to the east will be closed for construction for the bulk of 2009. Construction is proceeding well in the west closure section.

This quarterly report assesses the period March through May 2008 that includes the 3rd, 4th and 5th months of the western closure, evaluating the three key areas of **Project Communications** (MoDOT's provision of information to the public, and the public's response to the project), **Mobility** (the effects of the closure on travel behavior, choices, and traffic flow), and **Economics** (the effects of the closure on businesses within the corridor as well as the economic health of the region). With the western closure now five months old, findings are beginning to emerge that will be of interest to MoDOT and the general public. To date, the research team has found:



Communications (pp. 2-10)	Mobility (pp. 11-21)	Economics (pp. 22-24)
<p>Over 2,950 members of the public have given feedback through web surveys, mail surveys, personal interviews, and surveys administered by Motorist Assist.</p> <p>The public is fairly satisfied with the closure, how information has been communicated, and how they are managing to move around the region.</p> <p>The closure has had varying effects on the public's travel habits, with nearly 3/4 indicating their travel frequency has changed for certain trips and earlier morning commute times.</p> <p>People's reported travel times are lengthening (travel times greater than 15 minutes was approximately 29%), although many trip times are relatively unchanged.</p>	<p>The closure has re-routed approximately 140,000 to 150,000 vehicles per day; travelers have taken alternative routes, altered their travel schedules, and considered alternate modes.</p> <p>Freeway travel times are similar to the previous year and there is a noticeable peak spread and increased traffic volumes on some freeways.</p> <p>The RideFinders rideshare program experienced a 37 percent jump in comparison to the last year and during the month of May, 500 new participants signed up. Gas prices have probably contributed to the demand for these services.</p> <p>Arterial traffic volumes generally have increased between 3 and 50 percent (see page 16) except Lindbergh Boulevard, where traffic patterns have changed because of the closure.</p>	<p>A draft major findings report was developed on the first regional business survey. 369 respondents provided information for inclusion to this report.</p> <p>MERIC supplied special ZIP-code-level data for the first quarter of 2006 and all four quarters of 2007. This information along with the previous completed economic study for serve as baseline data.</p> <p>Specific transportation-dependent local firms and organizations were identified for detailed follow-up interviews. These firms include catering, parcel shippers, utilities, hospitals, hotels and lodging, agricultural research and museums. To date, 12 firms and organizations have been interviewed.</p>

2. Communications

Communications Highlights

The citizens of the St. Louis region are providing input to this research through online surveys, mailed surveys, handouts by Motorist Assist operators, and personal interviews. Highlights gleaned from these surveys include:

- **Awareness.** From the responses to date, it appears that MoDOT effectively communicated the upcoming closure to the affected population in 2007; pre-closure awareness was reported as very high.
- **Satisfaction.** Respondents are largely satisfied with their ability to travel around the region and with the level of information that has been communicated by MoDOT and others regarding the closure.
- **Information Sources.** TV News appears to be the best way to reach the majority of the respondents, with radio news, newspapers, and road signs also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a large portion of the general population does not obtain their information via the internet and other methods should continue to be used to reach them.
- **Alternative Routes.** I-44 was the most recommended alternative route. Two nearby parallel arterials, Ladue Road and Clayton Road, received more negative recommendations than positive (with Ladue receiving over 1.6 times as many negatives as positives).
- **Travel Time.** The majority of respondents are indicating that their travel time for basic trips has increased; although many have indicated no change or even an improvement in travel times.
- **Travel Mode.** Initial responses on how the closure has changed people's mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been, and continues to be, the automobile.
- **Personal Impact.** The closure is affecting people's trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping and eating out. Overall, almost three quarters of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Some residents have shifted their work hours, especially the respondents to the Web survey, who indicated a shift to earlier morning commutes. However, the web survey received a heavy early response when impact uncertainty to the closure was high. This issue will be explored in more detail as progress is made on the I-64 study.

To date, the responses have been fairly consistent over the various survey methods (with the exception of some of the interview results as can be seen in the travel-time responses presented later). This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population (other than issues related to online access, which is by definition skewed in the Web survey responses).

Communication Assessment Objectives and Methods

Major Goals – Communication Assessment

Develop and implement survey instruments
Determine effectiveness of pre-closure notification
Measure participant satisfaction for key issues
Estimate changes in behavior
Hear everyone's voice
(obtain generalized sample)

Total Collected Surveys by Method

Web	1,040
Mail	700
In-person	100
Motorist Assist	
MoDOT	749
I-64 Traffic Response	362
TOTAL	2951

Four classes of survey instruments were developed to assess the communication aspects of this project:

- A detailed online survey was developed; participants had the option to complete a brief, medium, or detailed survey. Surprisingly, 61 percent of the respondents were interested enough in sharing their opinion that they elected to complete the detailed survey. Links to the survey were placed on both MoDOT's main website and the New I-64 Project site. MoDOT, through its project public outreach efforts, continues to encourage and promote public input via this survey method. Beginning in the 3rd quarter (June 1, 2008), enhancements were made to the online survey instrument to gain additional information and insight on the I-64 project. A copy of the enhanced online survey is contained in Appendix A.
- To help obtain a representative sample, a physical survey was developed and mailed to 10,000 respondents in twenty-eight zip codes near the I-64 project. This work was completed during the first quarter and summarized in the 1st quarterly report. This mailed survey was successful in helping achieve a better cross-sectional representation of the region's population. This survey will be administered again early in 2009 and after the I-64 project is completed.
- In-person surveys were utilized to assess public opinions at two major shopping locations in the immediate area of the closure (the St. Louis Galleria near I-64/I-170, and Schnuck's grocery store at Lindbergh Boulevard and Clayton Road). These interviews were conducted late in the 1st quarter and are summarized in this report, with the final summary report contained in Appendix A.
- Project satisfaction measures were also added to the Motorist Assist and I-64 Traffic Response service surveys that are distributed to people serviced by Motorist Assist and I-64 Traffic Response operators. During the second quarter period, 650 - Motorist Assist and 324 - I-64 Traffic Response were received. This significant increase in survey information received is a direct result of operators' encouragement to those they serve to complete the survey, to help strengthen both programs with public input received.

In order to facilitate comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the "not sure" or "no opinion" percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Communications Results

Use of I-64, Knowledge of the Closure

The survey results indicate that the public was very aware of the closure well before it occurred. 98.4 percent of the online respondents were aware of the upcoming closure in 2007, and since 97.2 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information. The changes between the first quarter and second quarter report measurements were generally less than 1 percent. The entire five months of online survey data is included in this report to give a more complete picture of perceptions regarding the roadway closure to-date for readers of this report.

Usage of I-64 before Closure (Web Only)

Almost every day	32%
Very rarely	20 %
Two to three times a week	16 %
Once a week	15 %
Most weekdays	14 %
Never	3 %

Knowledge of Closure (Web Only)

Aware of closure before survey:	98 %
Learned about closure:	
Before Dec '07	94 %
Dec '07	4 %
Jan '08	2 %

Satisfaction

The charts at right summarize survey respondents' opinions in the area of satisfaction. As the graphs indicate, 69 to 95 percent of the respondents expressed satisfaction in response to each question in each forum, and responses were fairly consistent across the different survey types.

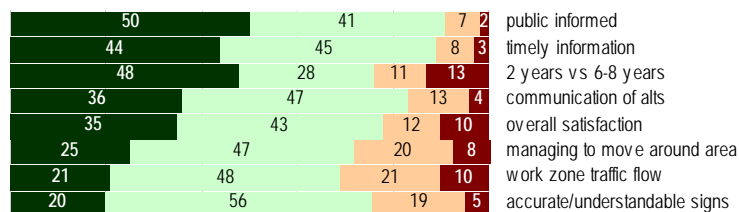
Satisfaction was highest with "how well the public has been kept informed" (91 to 95 percent) and "the timeliness of information" (89 to 94 percent). The least amount of satisfaction was expressed for "how traffic is flowing in work zones" (69 to 76 percent) and "accuracy and understandability of construction zone signs" (76 to 77 percent).

The in-person interviews, conducted late in the first quarter at two major shopping locations near the closed section of I-64, showed general agreement with other survey results. Conducting surveys at shopping locations provides a potential correlation link with the economic component of this study. Consistency in data across all survey efforts helps validate that true public opinion is being gained.

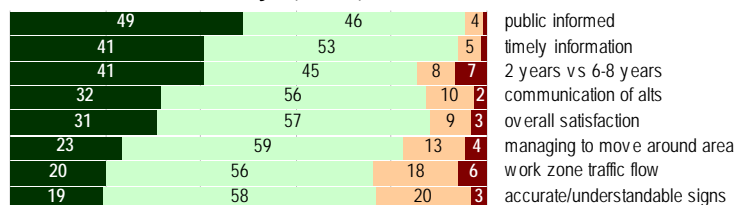
Respondent Satisfaction (% of respondents)

Very Satisfied Satisfied Dissatisfied Very Dissatisfied

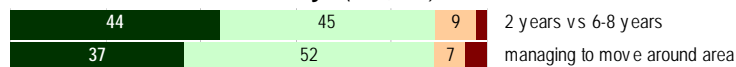
Web Surveys (n= 1,040)



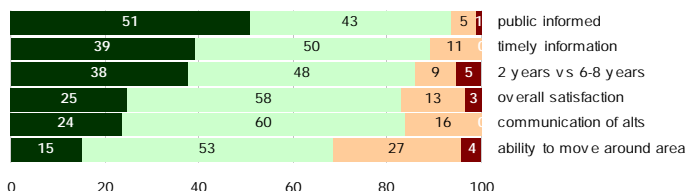
Mail Surveys (n=700)



Motorist Assist Surveys (n=1,111)



Interviews (n=100)



Note: written and verbal responses to the surveys are still being processed, but one notable item is that respondents have expressed satisfaction regarding the regional collaboration on signal timing that has facilitated arterial flow during construction; the public has also expressed a desire to see these timing improvements continued after the project is complete.

Personal Impact of the Closure

As the graphs at right indicate, respondents much more often modified their frequency of travel to certain areas than the location of their basic trip destinations. The most affected destination types were shopping (29 to 39 percent) and eating out (21 to 37 percent).

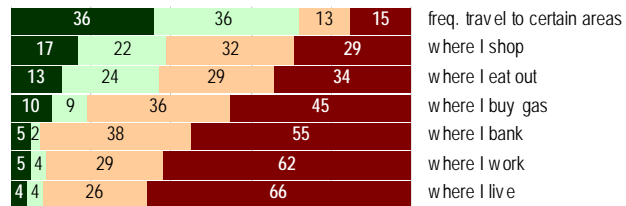
Most respondents indicated that they have continued to work the same hours in the same locations since the closure. The online respondents, including residents more distant from the closure than the mailed survey, were much more likely to have shifted hours in response to the closure compared to those who completed the mailed survey.

The web survey revealed a stated shift to earlier morning commute/travel hours (192 before to 277 after), but no significant shift in the evening hours. It should be noted that anecdotal information, and other observations, indicate that this shift was high initially, but has lessened over time as conditions have begun to stabilize. The high number of web survey responses in the early weeks of the closure may therefore skew this data; future reports will further examine time trends to explore this effect.

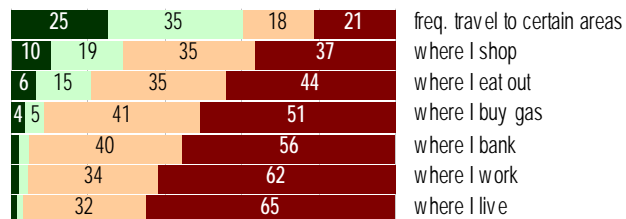
The Closure Has Changed... (% of respondents)

Strongly Agree Agree Disagree Strongly Disagree

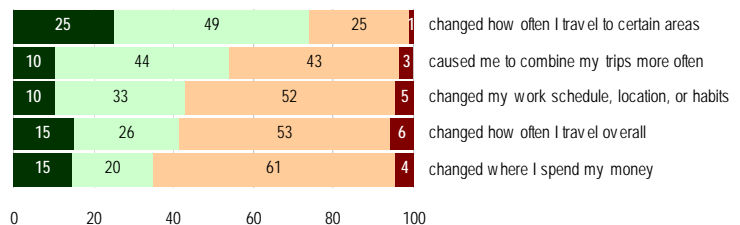
Web Surveys (n= 1,040)



Interviews (n=100)



Mail Surveys (n=700)



Spatial/Temporal Effect on Job

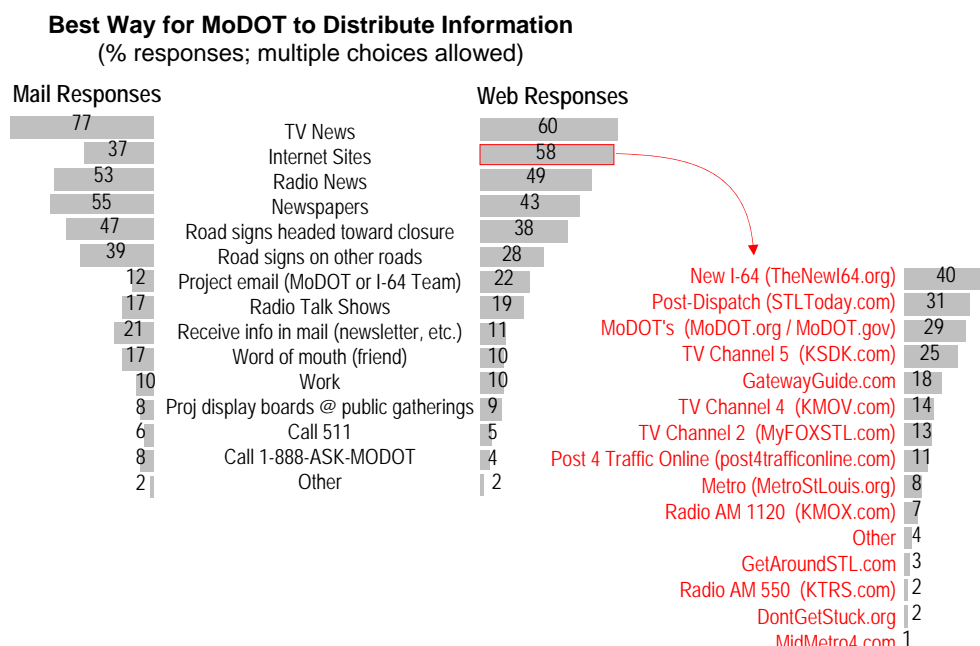
	Mail	Web
Same hours, same location	87 %	69 %
Shifted hours	8 %	22 %
Shift location more often	4 %	6 %
Quit job	1 %	3 %

Commute or Other Travel Period Demonstrates Shift

	Web only	
	before	after
before 7 am	192	277
7 - 9 am	419	334
9 am - 3 pm	93	103
3 - 6 pm	370	376
after 6 pm	125	145

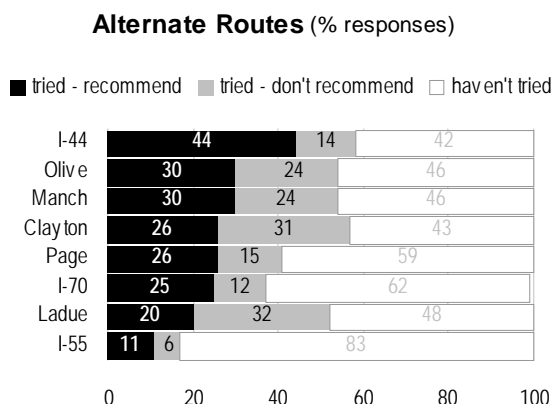
Information Sources and Communication Methods

TV News was considered to be the best method for MoDOT to distribute information to the public by the respondents of both the online and physical surveys. As expected, there was much variance in the perceived effectiveness of internet communications between the two survey types. Online respondents, who had to have access to the internet to even complete the survey, thought the internet was the second best way for MoDOT to provide information to them. However, those who returned the physical surveys were not as likely to use the internet to obtain their information (only 37 percent of these respondents thought the internet was a good way for MoDOT to provide them with information). Radio news and newspapers were also considered very good methods of communication, followed by road signs.



Alternative Routes

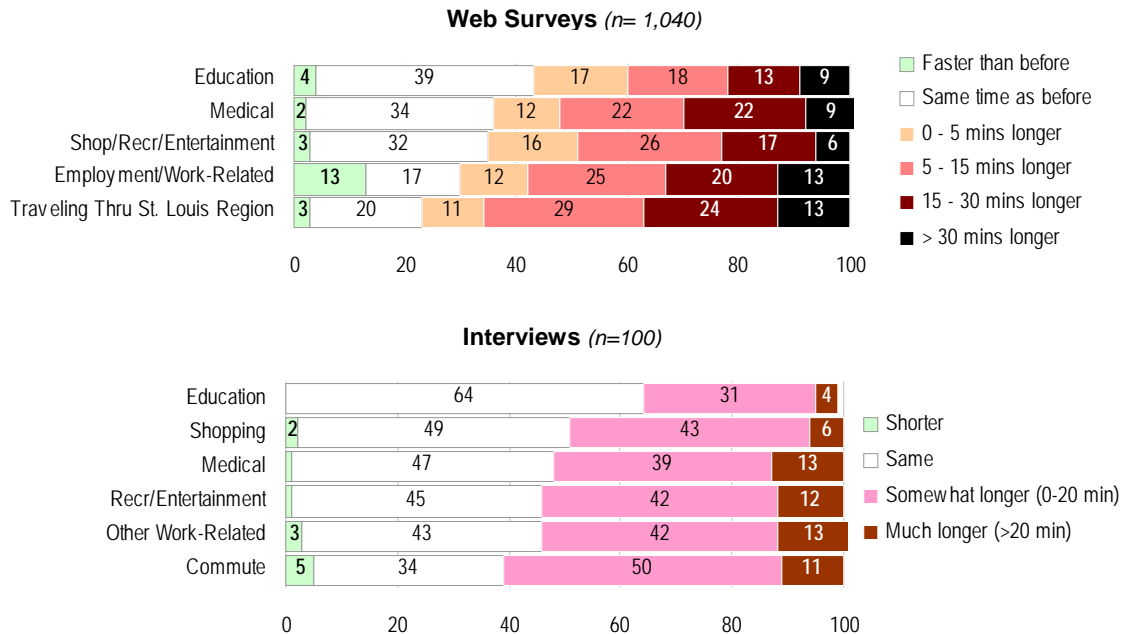
Respondents were also asked to provide input about eight alternative routes. I-44 was the most recommended route, with 44 percent of the respondents recommending it (just over three-fourths of those who had tried the route). Clayton Road and Ladue Road were the least recommended routes, in the sense that more respondents recommended against their usage than for them.



Travel Time

As indicated by the graph below, the majority of Web survey respondents (57 to 77 percent) and Interview survey respondents (36 to 61 percent) indicated that various trips had gotten longer since the closure. A total of 9 to 13 percent of respondents (web survey) stated that their trips had increased by 30 minutes or more, and 4 to 13 percent of respondents (interviews) stated that their trip had increased by 20 minutes or more. Notably, when asked specifically about work trips, 13 percent of web respondents (and 8 percent of interviewees) indicated that their work trips were actually faster than before.

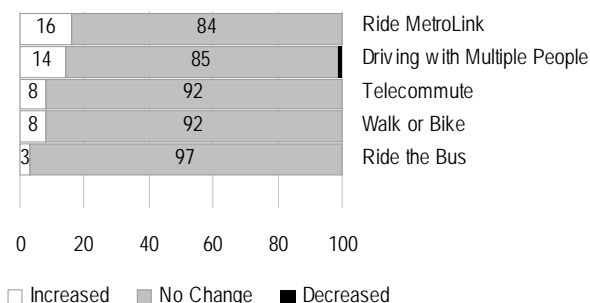
Travel Time Difference by Purpose (% responses)



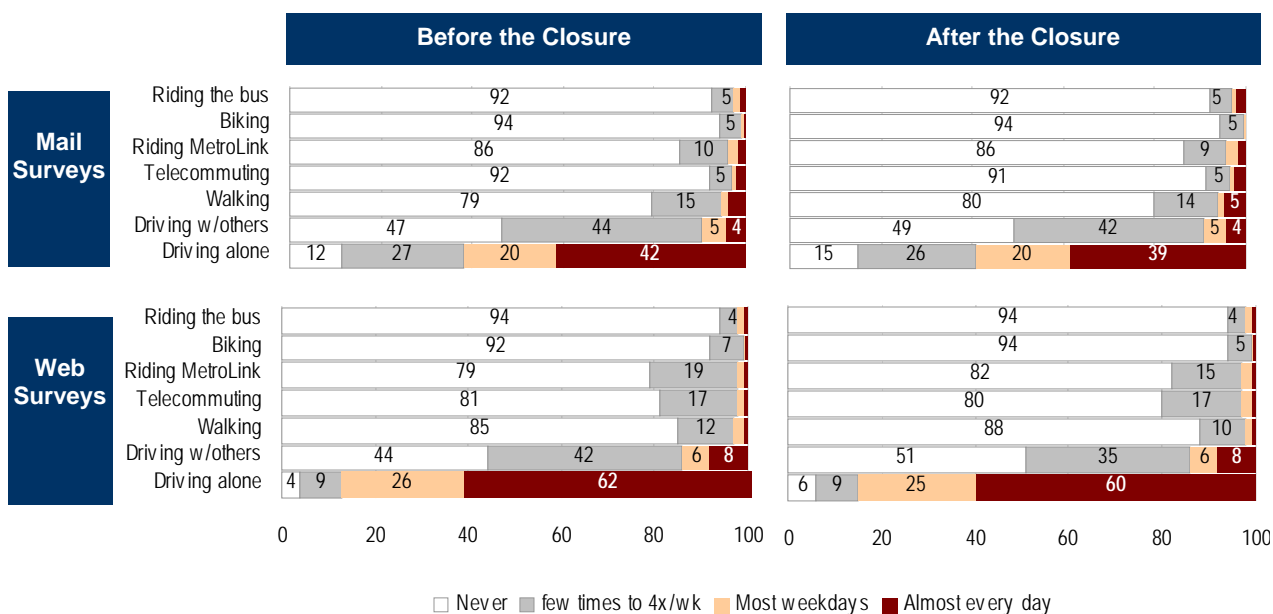
Travel Modes

To date, the surveys have revealed only slight changes in reported travel mode since the closure, as illustrated below and at right. Single-occupant driving has apparently slightly decreased by 2 to 3 percent, and carpooling also appears to have decreased. For other modes, the fluctuations are not stark, but there appears to have been some increase in each. Further study of these results, in comparison with mobility results, may shed additional light on commute options. The interview survey travel mode question was more direct in nature regarding travel mode shift; however, the sample size of 100 respondents and sample location near the closure may require correlating this information with future interviews along the corridor. Also, the increased carpooling shown in the figures below appears to correlate to the increasing matches reported by RideFinders.

Change in Travel Mode
(% of respondents, interview)



Travel Mode (% of respondents, mail and Web)



Demographics

The table below summarizes the responses to demographic questions from the respective surveys. One of the purposes of supplementing the Web survey with a mail survey was to reach populations without internet access, in order to ensure the research considered the input of as many groups as possible – a representative sample. By targeting the mail survey at many of the zip codes near the closure, the research team succeeded in its objective of reaching a more diverse population, especially in reaching more minorities and more females.

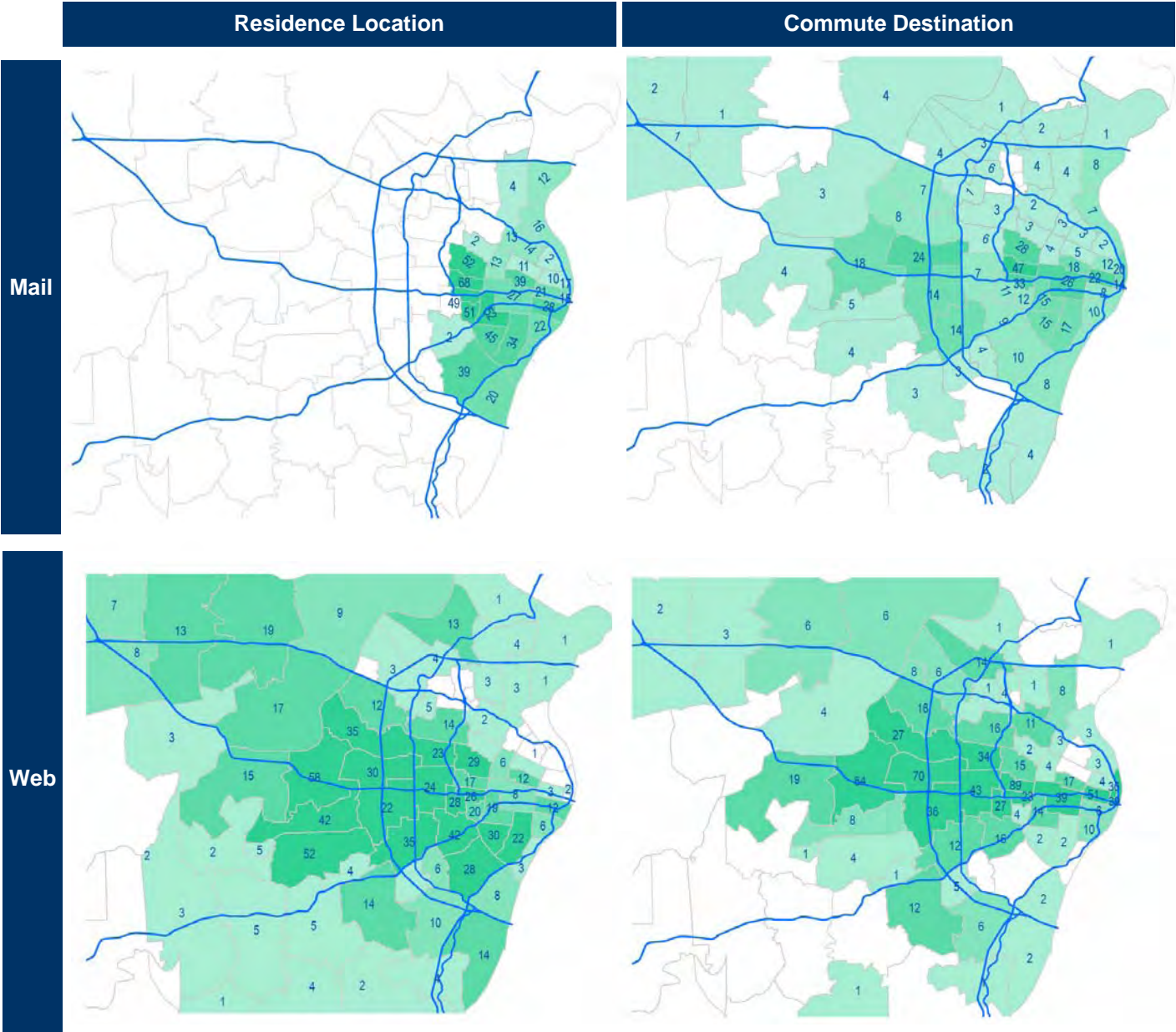
Demographics of Survey Respondents

Age	Mail	Web	Interview	Gender	Mail	Web	Interview
under 25	5 %	11 %	7%	Male	41 %	55 %	34%
26 to 40	20 %	37 %	41%	Female	59 %	45 %	66%
41 to 65	57 %	50 %	32%				
Over 65	19 %	2 %	20%				
Race	Mail	Web		Income	Mail	Web	
American Indian	1 %	1 %	0%	Less than \$20,000	*	2 %	*
Asian	1 %	2 %	1%	\$20,000 to \$40,000	*	11 %	*
Black/African-American	15 %	2 %	12%	\$40,001 to \$60,000	*	17 %	*
Hispanic/Latino	1 %	1 %	1%	\$60,001 to \$90,000	*	21 %	*
White/Caucasian	79 %	92 %	86%	\$90,001 to \$120,000	*	23 %	*
Other	2 %	2 %	0%	\$120,001 to \$150,000	*	9 %	*
				\$150,001 to \$200,000	*	9 %	*
				More than \$200,000	*	8 %	*

** Based on the sensitivity of question, it was not asked in these surveys*

The maps on the following page illustrate the zip codes of survey respondents within Missouri (a small portion of the responses – around 2 percent – were from outside the state). These results are preliminary; future reports will likely aggregate zip codes into larger geographic units with more statistical robustness.

Survey Respondents' Residence, Commute Destination (by zip code)



3. Mobility

Mobility Highlights

The study team continued the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. Key findings to date are listed below:

- Approximately 140,000 to 150,000 daily vehicles used the segment of I-64 between Ballas Road and I-170 before its closure. The assessment of where those vehicles have gone is still underway; based on the data in this report, the only large traffic increase seen with available data is on I-170. Volume data is still being evaluated for I-70, I-270, and the many parallel facilities that have been impacted by the closure. More data will be available next quarter, when year-old archive data from some of these facilities first comes on-line.
- Initial analysis of Traffic.com travel-time data has not indicated a significant variation in peak-hour travel times on key freeways in the region; however, additional study is needed before any conclusions can be reached.
- Transit usage is up by 9 percent over a year ago; however, this trend is not far out of alignment with the growth of the past two years.
- The RideFinders Rideshare program continued to experience increasing growth rates, with a 37-percent jump in monthly rides in the year between April 2007 and April 2008; this increase, plus smaller but noteworthy increases over the past six months appears to have been in response to (and anticipation of) the I-64 closure.

Mobility Assessment Objectives and Methods

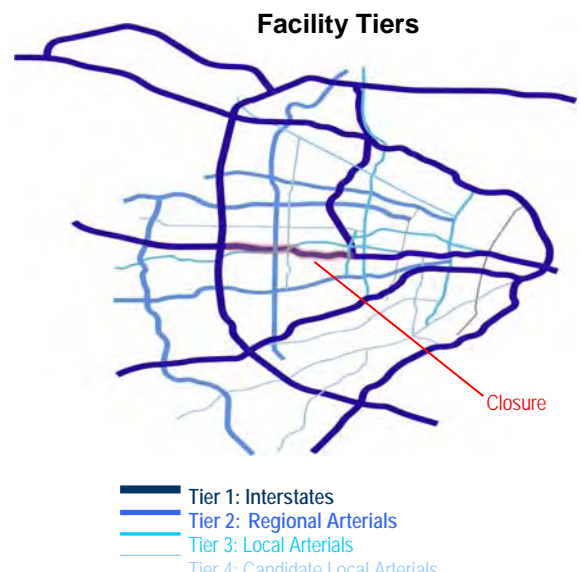
This assessment uses a variety of tools to measure the region's mobility before, during, and after the closure period. The assessment examines traveler shifts and their effects, using a

Major Goals – Mobility Assessment

- Assess the shifts (temporal, spatial, and modal) in travel demand throughout the region
- Assess congestion effects of the closure
- Assess closure effects on transit, ride-sharing, and park-and-ride demand.

multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels, and future reports will continue to hone and refine the assessment.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Tier 4 facilities are being assessed to see whether they should be included in the Tier 3 grouping, or excluded from further analysis. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) are being gathered



throughout the duration of the closure to measure its regional impacts.

Mobility data is being obtained through numerous sources:

- MoDOT is providing historical traffic counts through its count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times since the I-64 closure. MoDOT also maintains statistics for its park-and-ride facilities across the state, and is providing monthly count data for its facilities in the region. Finally, MoDOT has produced a series of e-mail updates (initially daily, now weekly) that provide area residents (and the study team) with important mobility information.
- Traffic.com is a commercial Web site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. These data are based primarily on sensors placed throughout the area. Traffic.com archives traffic volume, travel speed, and incident data – in 1-minute intervals – and has an agreement to share this information with MoDOT. The research team developed customized software routines to download, organize, prune, and analyze this data.
- St. Louis County has conducted traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and is providing statistics aggregated on a monthly basis. In addition, Metro collects parking data at its stations with park-and-ride facilities.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data is provided on a monthly basis.
- The research team is supplementing data collection where necessary, including travel-time runs, traffic counts, and field observations.

Mobility Results

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by The New I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right. As the list indicates, one change has been reversed in recent months.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. The research team has recently received a complete list of these improvements, and they will be

Key Improvements to Regional Highways/Roadways

I-70 Restripe from I-170 to I-270 (add lane in each direction)

I-44 Restripe from I-270 to I-55/I-70 (add lane in each direction)

I-270/I-64 ~~Restripe interchange ramps to improve traffic flow~~ now returned to original configuration

I-270/I-44 Restripe interchange ramps to improve traffic flow

Clayton Road Restripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road

Ladue Road Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road

Improved Signal Timing along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park Parkway

incorporated into future reports.

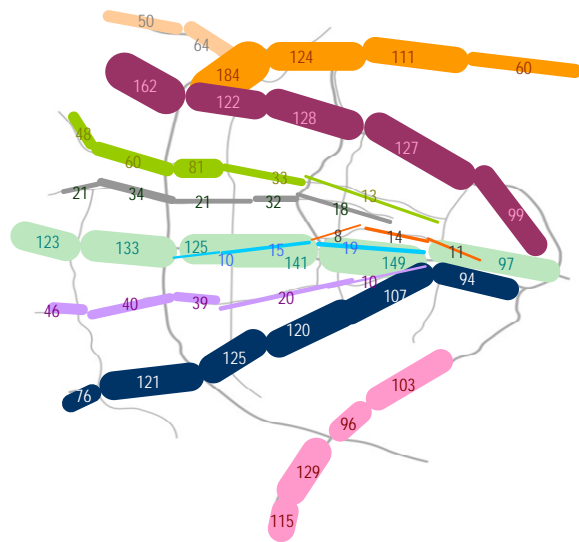
Traffic Volumes

Freeways

Prior to the closure, in baseline 2006, I-64 carried approximately 107,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding “outlier” days). 100 percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

Several sources are being used to evaluate the closure’s effects on traffic volumes - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The map at right, extracted from Traffic.com and MoDOT data, shows east-west daily traffic volumes for many of the key study facilities for the baseline year of 2006. Similar data has been extracted for the key north-south facilities (I-270, I-170, Lindbergh Boulevard, etc.) It is important to note that this information averages every non-holiday, non-“outlier” weekday from 2006, and therefore is not a good base against which to compare the effects of the closure for smaller periods (such as the current quarter under evaluation). However, it is useful for illustrating order-of-magnitude baseline conditions.

**Baseline Daily Weekday Traffic (000's)
East-West Corridors (2006, full year)**



The maps on the next page show a more fair initial comparison for selected segments. They compare weekday March-May 2008 volumes with the March-May 2007 volumes. (Weekend volumes are also being assessed.)

Based on these maps, the following preliminary conclusions can be gleaned:

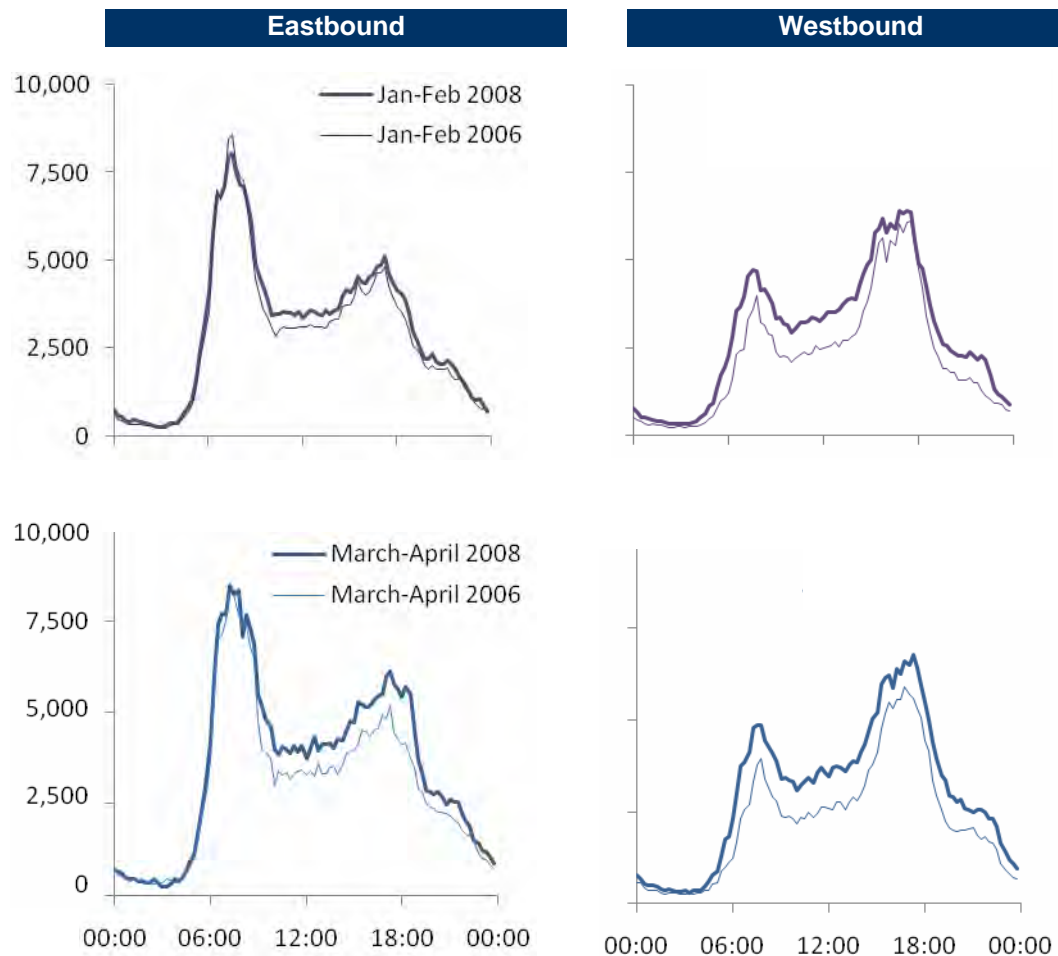
- Daily traffic volumes on I-64 immediately east of the closure have decreased by approximately 15,000 vpd.
- Daily volumes on I-44 and I-55 appear to be roughly equivalent to those before the closure.
- Volumes on I-170 between I-64 and I-270 have increased by approximately 12,000 to 16,000 vpd compared to the previous year.

Daily Traffic Volume Comparison (000's) on Selected Segments, 2008 vs. 2007 (PRELIMINARY)



The Traffic.com data is also being examined at more refined resolutions, from hourly totals all the way down to five-minute volumes. The graphs below illustrate how the effect of the closure on the **duration of the peak period** is being examined. As the graphs indicate, overall volumes on this segment have generally increased, but the peak periods have spread as well. Further analysis of this spread will be undertaken in subsequent reports.

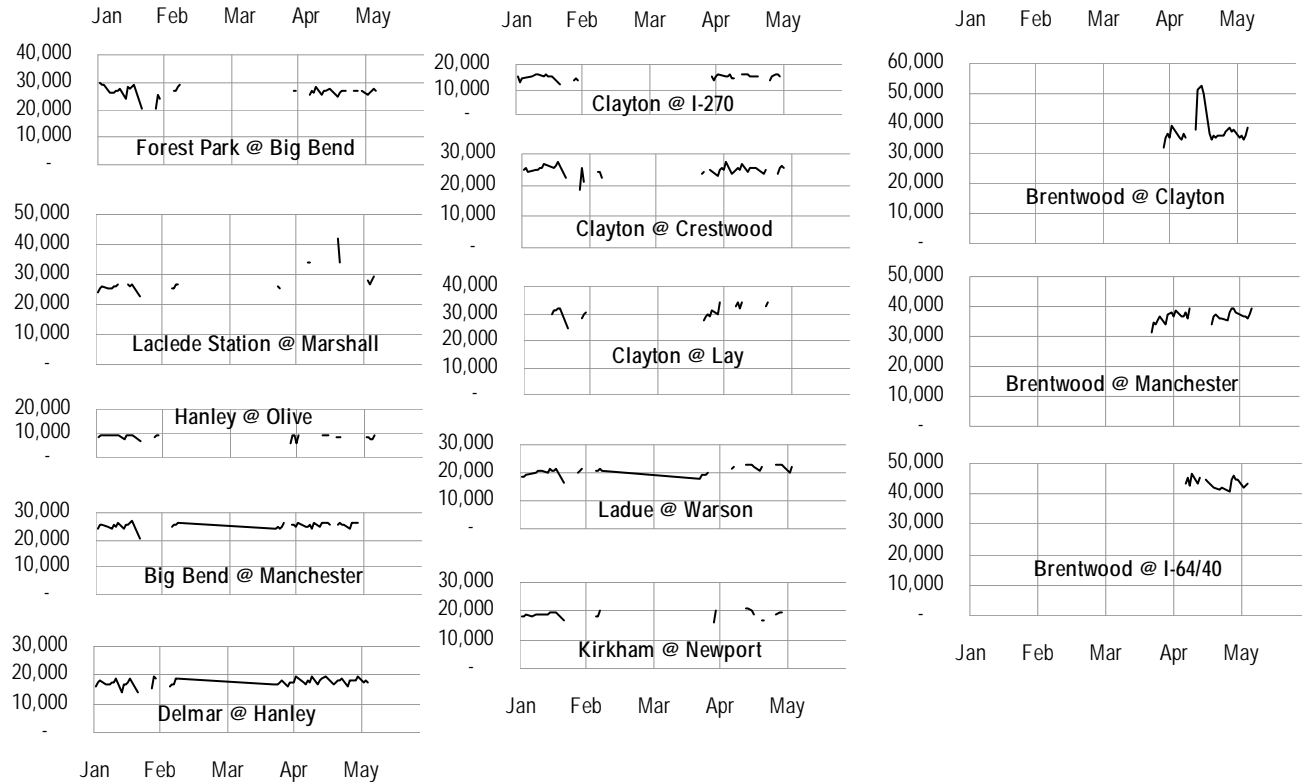
Example 15-Minute Traffic Volume Profiles I-44 at Elm Avenue



Arterials

St. Louis County has been tracking arterial volumes since the I-64 closure. The graphs below illustrate ADT data available from the County and are under study to extract trend information. For many days on which data are not plotted, volumes are only available for one direction. No significant conclusions can yet be drawn from these data, but they will continue to be a resource as the study progresses.

Average Daily Traffic Volumes Recorded by St. Louis County, 2008



MoDOT also collects volume data from many of the arterials in the region using its ACTRA system tied into signalized intersections. The graphs on the following pages examine volume trends on many of the key arterials during both peak hours on a monthly basis since the closure, including a comparison to a pre-closure baseline. The table below summarizes the data. Several limitations of the data should be noted:

- The pre-closure data is from a single day, in most cases collected in November or December 2007.
- During the closure, not all days had available or usable data.
- This data reflects only through volumes approaching intersections; hence, right- and left-turning traffic is not included.

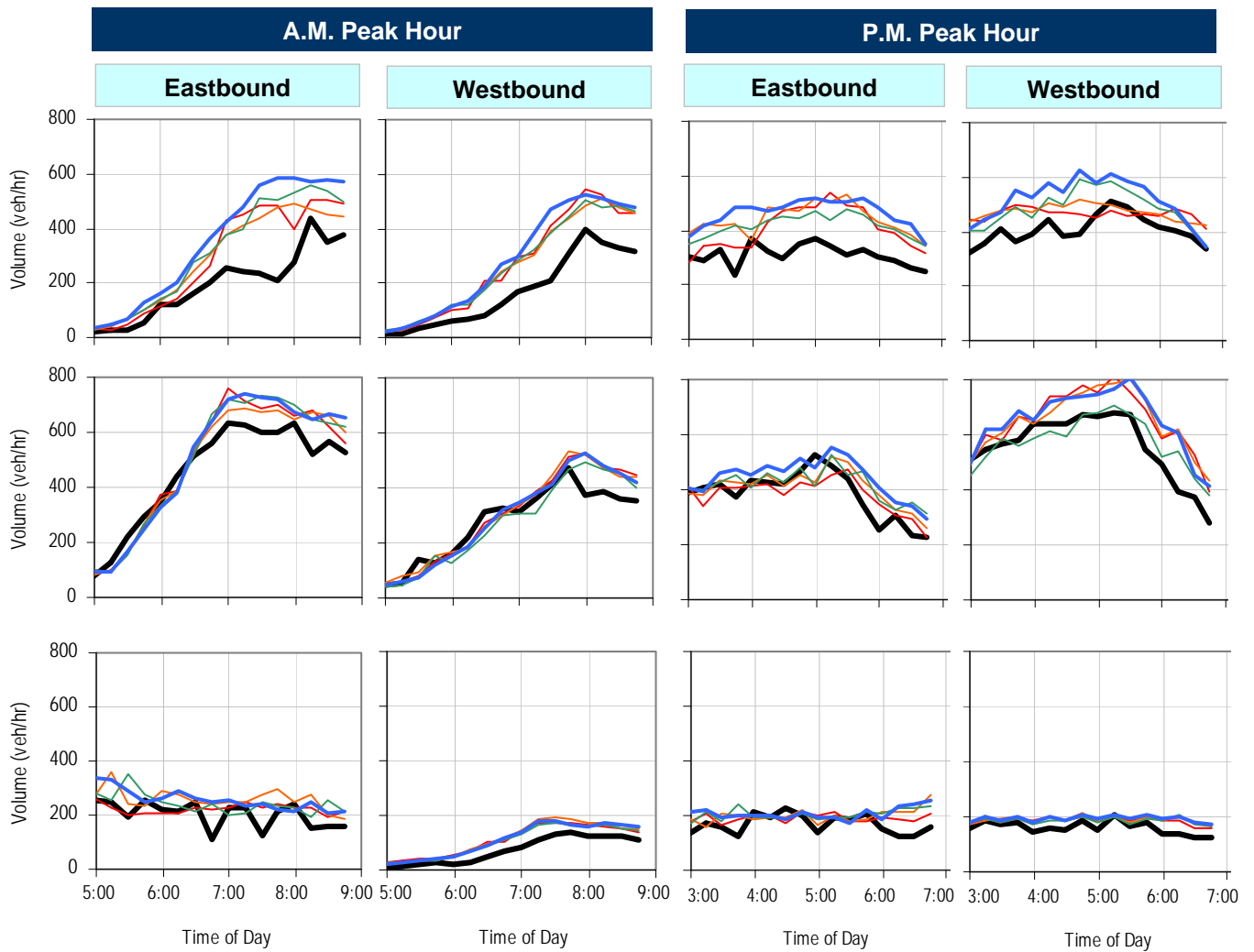
In spite of these limitations, the data reveals some anticipated patterns, such as volume increases on Page and Olive, which run parallel to the closure. Archiving and studying these data beyond the closure will help in understanding the closure's effects.

Summary of ACTRA Volume Reporting Since Closure, Key Arterials

	A.M. Peak Period	P.M. Peak Period
Olive	Eastbound and Westbound: 50% to 80% increase at Old Ballas	Eastbound: 30% to 50% increase Westbound: 14% to 27% increase. (p.m. volumes higher than a.m.)
Page	Eastbound: 7% to 11% increase. Westbound: up to 10% increase (a.m. volumes higher than p.m.)	Eastbound: 15% increase (after initial slight dip of -0.6%) Westbound: 3% to 17% increase
Manchester at Braeshire	Eastbound and Westbound: 4% to 17% increase	Eastbound: 6% reduction (after initial January dip of 20%) Westbound: 9% increase (after initial dip of 7%)
Manchester at Lindbergh	Eastbound: 10 to 27% increase Westbound: 44% to 53% increase	Eastbound and Westbound: 12% to 22% increase
Rte. 141 at Howard George	Southbound: 4% to 20% increase Northbound: dip below pre-closure (after January increase)	Southbound: 5 to 10% decrease Northbound: 4 to 7% increase (except February dip of 7%)
Lindbergh at Conway	Northbound and Southbound: 20% to 40 % decrease	Northbound and Southbound: 20% to 40 % decrease
Lindbergh at Manchester	Southbound: 200% average increase Northbound: 40 to 65% reduction	Northbound and Southbound: 40 to 65% reduction

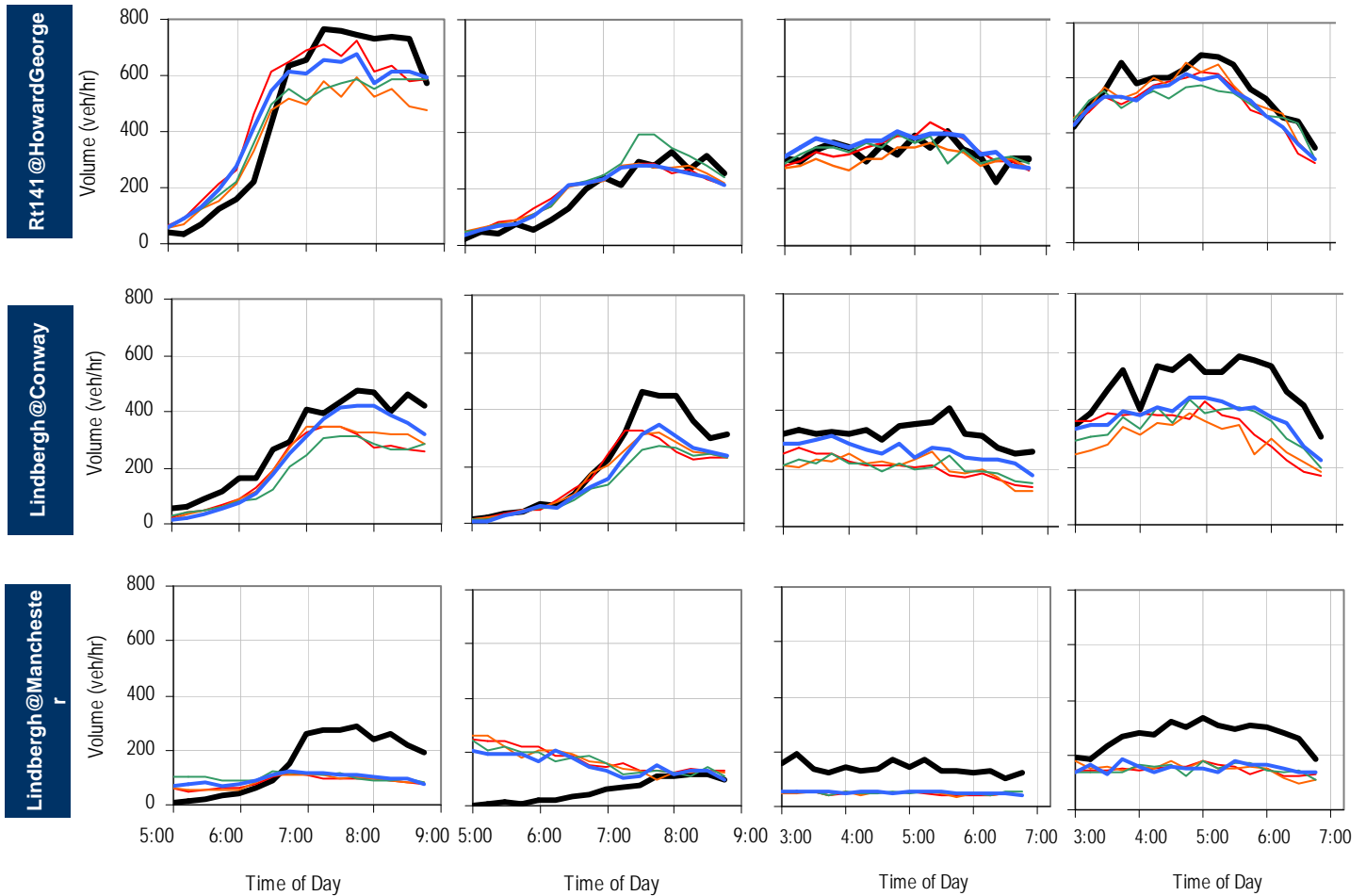
Arterial Trends, 15-minute Volumes during Peak Periods – MoDOT Actra System, 2008 East – West Routes

— Baseline
 — Jan '08
 — Feb '08
 — Mar '08
 — Apr '08



Arterial Trends, 15-minute Volumes during Peak Periods – MoDOT Actra System, 2008 **North - South Routes**

— Baseline
 — Jan '08
 — Feb '08
 — Mar '08
 — Apr '08



**Travel Times (min),
Selected Freeway Segments
(Preliminary)**

Travel Times

The research team has begun using Traffic.com's archived speed data to calculate travel times on freeway segments throughout the region. The table at right contains some of the data extracted. P.M. peak-period data are averaged over the current quarter, and compared with the last three months of 2007. In the next quarterly report, a more direct comparison of identical periods from 2007 and 2008 will be possible because Traffic.com data is available after June of 2007. The travel times in general do not show major variations from the pre-closure data, and also generally indicated faster travel times. The causes of these results will continue to be investigated, and could be attributable to a combination of peak-spreading, re-routing due to the closure, increased fuel costs, and other factors.

	Miles	Travel Time (min), P.M. Peak Hour	
		Aug-Dec '07	Mar-May '08
I-70 from I-270 to I-170			
EB	3.7	5.6	5.6
WB	3.6	6.3	5.8
I-170 from I-270 to I-64/US 40			
NB	3.7	7.9	7.8
SB	3.8	7.9	7.8
I-270 from I-70 to I-64			
NB	3.5	9.2	8.1
SB	3.5	9.8	8.9
I-270 from I-64 to I-44			
NB	6.5	7.3	6.8
SB	6.6	12.7	10.6
I-44 from Rte 141to Kingshighway			
EB	3.0	13.6	13.0
WB	3.0	12.0	11.9
I-64 from Rte 141 to I-270			
EB	3.3	3.5	3.5
WB	3.3	2.9	2.9

Park-and-Ride

The table below summarizes one year's worth of quarterly parking counts at MoDOT's Park-and-Ride lots in St. Louis County and neighboring counties. Updates to this table will be made as information becomes available.

MoDOT Park-and-Ride Volumes

County	Lots	Total spaces	Vehicles Parked in Lot				
			Feb07	May07	Aug07	Nov07	Feb08
Franklin	6	413	295	205	189	175	168
Jefferson	11	962	321	337	379	386	367
St. Charles	12	1110	427	403	283	315	301
St. Louis	6	792	519	540	582	451	493
Total	35	3277	1562	1485	1433	1327	1329

Transit

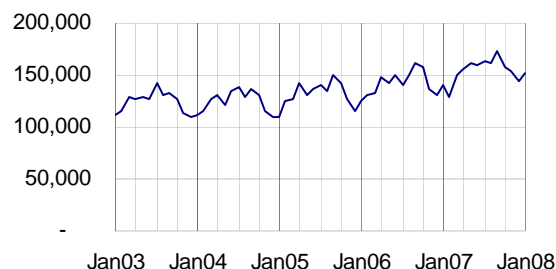
At the time of this report, Metro statistics are only available through January 2008. The table and graphs at right summarize some key statistics regarding Metro usage. Ridership on the total Metro system in January 2008 (the first month of the I-64 closure) was over 9 percent higher than ridership in January 2007. However, as the graphs indicate, Metro ridership has been steadily increasing since at least mid-2005, and the increase seen in comparing January 2008/2007 data does not appear to substantially deviate from this trend.

Anticipated statistics from Metro will shed additional light on any closure-related transit trends. Future quarterly reports will examine more specifics regarding individual routes affected by the closure.

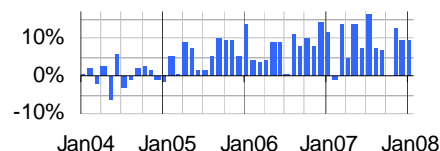
Key Transit Statistics

	Jan '08 ridership	Increase over Jan '07
MetroBus (fixed route)	2,723,970	9.1%
MetroLink (passenger rail)	1,944,205	9.4%
Call-a-Ride (paratransit)	60,167	8.4%
Total Metro system (includes services not listed)	4,733,423	9.3%

Total Metro system – equivalent daily riders per month



Month's increase over previous year

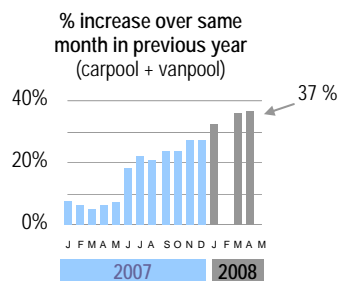
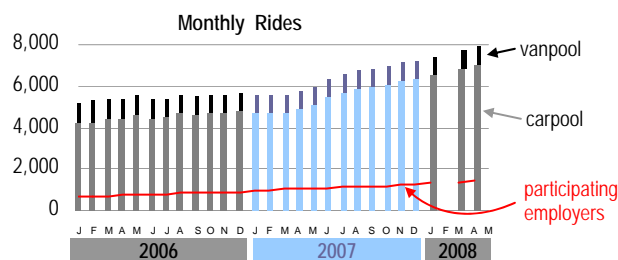


Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The graph at right shows historical ridership for RideFinders, and indicates a general upward trend since the second half of 2007. The lower portion of the figure further illustrates this jump in ridership by indicating, for each month, the percentage increase over the previous year. As the graph indicates, one-year increases in 2008 have been over 30 percent, much higher than in 2007. Obviously, some portion of these increases can be attributed to rising fuel costs, but the I-64 closure also has been a likely contributor.

The research team is working with RideFinders to obtain more details to help correlate rideshare activities with I-64 closure statistics.

Ridefinders Statistics



4. Economics

Economics Highlights

Major Components of Economic Analysis

Analysis of pre-closure and current conditions

Determine the effectiveness of the reconstruction and traffic management strategies on the local economy

Identify the strategies that are the most appropriate for near-term and long-term economic vitality based on special data tabulations, survey results, and individual

The primary highlight for this quarter is the analysis of the first business survey's results. Three hundred sixty-nine survey responses from St. Louis businesses were collected during the period from February 18th through March 13th, 2008. The collection of published economic data is ongoing, and the analysis of the first package of custom ZIP code level data from the Missouri Economic Research and Information Center (MERIC) has begun. To date, MERIC has provided HDR with economic data for first quarter 2006 and all four quarters of 2007. Given the time lag in available

economic data indicators, this quarterly report will only focus on preliminary economic conditions from before the I-64 closure, while future reports will include analysis of economic conditions and impacts after and related to the I-64 closure.

Economic Analysis Progress

Current activities to date include:

- Presented to the MoDOT Connections Committee regarding the approach for the economic assessment, the draft business survey, and data collection plan.
- Inventoried and collected available published economic, demographic, and fiscal data.
- Received from MERIC special ZIP-code-level data for the first quarter of 2006 and all four quarters of 2007. The economic data included: industry employment, wage, and establishment data tabulations.
- Created and distributed the online Business Survey. Feedback was provided from MoDOT prior to distribution. The survey was distributed with help from local and regional economic development/business organizations. The results of the business survey have been submitted to MoDOT for review and will be available shortly.
- Specific transportation-dependent local firms and organizations were identified for detailed follow-up interviews. To date, 12 firms and organizations have been interviewed.

Business Survey

The first business survey results were collected and analyzed resulting in a Major Findings document (Appendix C) that has been submitted to MoDOT for comments. The survey's combined distribution list included 6,000 contacts from the five economic development organizations that included 3,600 different businesses; for this round of business surveys, 369 separate responses were received. The three distinct focus areas of the first business survey were commuting, transportation/shipping costs, and sales/visitation. The survey's questions were directed at the conditions just prior to the closure and the changes following the closure of the Western portion of I-64. The survey has provided insight regarding how business performance is being impacted based

Business Survey – Selected Preliminary Results

Total Distributed	6,000+
Total Responses	369
Respondent location (based on zip code, reported by 73%)	
Immediate I-64 region	23%
Satisfaction w/ MoDOT execution of project	
Very satisfied	46%
Satisfied	40%
Dissatisfied	3%
Very dissatisfied	1%

on the business type, size, and proximity to western closure of I-64. Some of the business performance indicators included retail spending patterns, visitation, and transportation costs.

Major Findings:

- **Satisfaction:** 86 percent were satisfied or very satisfied with MoDOT's delivery and execution of the I-64 Project, and 91 percent were satisfied with the performance of alternative routes.
- **Proximity:** 86 percent of the businesses that completed the survey are located within 10 miles of the I-64 Reconstruction Project.
- **Future Planning:** 13 percent of total survey respondents said future decisions on expansion, new investment, or location of facilities will be impacted by I-64's closure.
- **Commuting:** To help manage during I-64's reconstruction, 38 percent of respondents noted the use of flex time programs while 16 percent encouraged car/van pools and 21 percent allowed increased telecommuting.
- **Transportation Costs:** 94 percent of businesses located within the impacted areas of the I-64 corridor have experienced a significant or minor change in cost due to travel time delays.
- **Sales and Visitation:** 12 percent of all businesses surveyed confirm a lower volume of visitors and customers each week¹.

Interviews

As a supplement to the business survey, HDR has conducted follow-up, in-depth interviews with transportation-dependent businesses in and near the I-64 corridor. The interview process is nearly complete for this stage of the evaluation as representatives from 12 separate businesses and organizations have been interviewed via telephone. Different industry groups were targeted, with significant help from the St. Louis Regional Chamber and Growth Association (RCGA), to provide a detailed and in-depth understanding of how a range of private sector businesses are being impacted adversely by the I-64 closure and the steps businesses are taking to cope with the closure. Representatives from the following local businesses and organizations have been interviewed: catering, parcel shippers, utilities, network hospitals, hotels and lodging, agricultural research firm, and museums. The overall consensus is that businesses expected the worst before the closure, but the conditions for the first quarter have not been nearly as bad as they anticipated. To cope, some businesses have offered new flex hours and telecommuting options, and all have encouraged carpooling or public transit. These interview findings have been consistent with the results of the business survey.

¹ Please note the survey questions were worded "For this time of year" to account for seasonal customer, visitor, and sales swings.

Economic and Fiscal Data Analysis

Preliminary analysis of the first custom economic dataset from MERIC was initiated this month. The first dataset included economic information for the first quarter of 2006 and all four quarters of 2007. The preconditions analysis of I-64 began with MERIC's Pre-Construction² analysis, which focused on the period from 2003 through the first Quarter of 2005. Our analysis will extend the precondition analysis forward through the fourth quarter of 2007, which will complete the preconditions portion of the analysis and establish a baseline for conditions before construction. It is anticipated that the first quarter of 2008 will be available in the third quarter of 2008, providing the most comprehensive dataset on economic impacts from I-64's January 2008 closure. The published data is at the ZIP code level for both St. Louis County and St. Louis City. The data has been sorted by geography (corridor or non-corridor) to be consistent with the geographic units used in the Business Survey analysis. In addition, quarterly ZIP code level data from Missouri Department of Revenue for Taxable Sales is being processed to gauge local consumer sales trends and impacts. The data by ZIP code includes industry detail at the two-digit NAICS level for the number of establishments, total wages, and the number of jobs. The table at right displays the aggregate economic information for the 9 ZIP code areas impacted by I-64 closures (corridor) and the ZIP codes that make up the remainder of St. Louis City and St. Louis County (non-corridor).

**St. Louis I-64
Corridor and Non-Corridor Economic Profile
(3rd Quarter 2007)**

	Corridor	Non-Corridor
Jobs	201,200	628,100
Number of Establishments	9,405	31,445
Wages (\$ Millions)	\$ 2,471	\$ 6,753
Total Taxable Sales (\$ Millions)	\$ 927	\$ 4,167

Source: MERIC and Missouri Department of Revenue

Zip Code Definitions for Study Regions



5. I-64 Traffic Response

I-64 Traffic Response Highlights

Major Goals – I-64 Traffic Response Assessment

- Assess benefit/cost of the current I-64 Traffic Response deployment (arterials)
- Assess value of continuing future arterial highway service patrol efforts
- Develop white paper that provides a sustainable approach to consideration of future arterial

The main highlight for this quarter was the collection of the I-64 Traffic Response surveys. These surveys are provided during each assist performed. This survey is providing information from motorists receiving these services, including information on location, response/wait time, services provided, the professionalism with which services were provided, and the user opinion on the value of the services. Additional questions on the I-64

project were also included to help gauge users' opinions on the I-64 project and to connect these services with the I-64 project. The survey form identifies the sponsors, and provides information on the regional traveler information systems (511 and Gateway Guide). 362 surveys have been completed and received during the first five months for the I-64 Traffic Response with 749 from Motorist Assist. In the third quarter, the study team plans to conduct interviews with staff involved with this operation and start the evaluation of responses made by the I-64 Traffic Response team.

I-64 Traffic Response Objectives and Methods

This assessment will utilize information collected from transportation users, I-64 Traffic Response/Motorist Assist staff, previous research/study efforts, and the mobility assessment component to establish the benefit/cost of the program. This information will then be used to forecast the future value of continuing regional arterial highway service patrol efforts. The assessment will explore the following potential expanded arterial highway service patrol alternatives:

- Expanded services only during major or roadway closure construction activities
- Continuous services along major regional arterial corridors
- Limited-response services along major arterial corridors by expanding the region's Motorist Assist Program and the utilization of the region's integrated management and operation system

A white paper will be developed by June 2009 that will outline a sustainable approach regarding when regional arterial highway patrol services should be considered. This deliverable will provide the region the time necessary to fund and implement desired recommendations.

I-64 Traffic Response Results

MoDOT performs service patrol activities where operators travel busy highways and provide assistance at incident sites for stranded motorists and crashes. By quickly helping to resolve problems, this program increases the safety and mobility of all motorists in the area. MoDOT's Motorist Assist program concentrates on the interstates, and I-64 Traffic Response sponsored by St. Louis County covers major arterial roads such as Manchester Road and Olive Boulevard. Starting on January 2, 2008 – the day of the closure – these programs' operators began distributing surveys to those they assisted to obtain feedback about operator performance, and as another method to learn how the closure is impacting motorists.

Responses indicate that motorists are very satisfied with operator performance, and their closure responses were similar to those obtained in the web and mail studies. The table at right summarizes some of these satisfaction measures. The 2nd quarter showed an increase in satisfaction compared to the first quarter, and represented input from 974 (650 - Motorist Assist and 328 - I-64 Traffic Response) respondents. The total of 1,111 surveys (compared to 1,040 online surveys) received indicates that this could be considered the most effective survey method to-date for gaining public input. The distribution and receipt of surveys will continue throughout the study period, with quarterly updates being made.

Percent Repondents Expressing Satisfaction
Motorist Assist and I-64 Traffic Response Surveys

	Decision to close for 2 years vs. 6-8		Ability to move around the St. Louis area	
	1 st Quarter	2 nd Quarter	1 st Quarter	2 nd Quarter
Motorist Assist survey respondents	59 %	67 %	56 %	67 %
I-64 Traffic Response survey respondents	63 %	74 %	67 %	64 %

Appendix A: Communications Data – “Final 1st Quarter Interview Report” and Revision Online Survey

Appendix B: Mobility Data

Appendix C: Economic Data – “Major Findings of First Business Survey”

Appendix D: Traffic Response Data

Summary of Initial Online Comments to Eastern Closure

A supplement to the March 2009 Quarterly Report

Respondents were given multiple opportunities to provide comments in the online survey. Each opportunity corresponded to a different part of the survey.

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Satisfaction Comments.....	7
Alternative Route Comments	13
How to Contact Comments	16
Alternative Website Comments	18
I-64 Project Website Comments	19

Impact of Closure Comments

The following comments were left in response to the statement *If you want to provide more details about how the closure has affected you, please do so here.* The comments are presented as they were received.

This part of the closure hardly affects me at all. The other part significantly affected me.

I think the workmen did a great job , the only thing I do not like I can't see 40 from my window at WORK .

During the eastern closure, I will be using the Forest Parkway route, as I live by the Mall at Brentwood and Eager Road. Unfortunately, Highway 44 is too far out of the way south of me to use for commute to work.

I am a Muny season ticket holder, and I'm concerned about the eastern half construction will effect my commute to the Muny from the Chesterfield area.

Takes a few minutes longer to get from HiPointe to the Richmond Heights P.O. or Sam's Club. Not that big a deal yet.

We live near 270 and Ballas and work near 40 and Kingshighway in the CWE. Before, we traveled East on Olive and took 170 South to 40 East to the CWE. Now, we plan on traveling South on Lindbergh to 40 and taking Forest Park Parkway to the Clayton Metrolink station, toward the CWE. Even though the travel time may not change, enjoying the new highway will be a treat!

I go to work later to avoid the traffic and work later to avoid the home traffic. I will also limit greatly going out with my friends in St. Charles/West county. I have rescheduled business meetings in West/North county to make them closer to my home in South City. I am also going to travel by train to KC & CHI so that I can park in the city and not drive to the airport. North STL driving at night when I am a single woman is not a smart idea with inclement weather.

today 12/16/08 they changed the time of the lights at forest park parkway and skinker and traffic on skinker was horrible. There was bumper to bumper traffic from 1/2 mile south of wydown until you crossed the parkway. And southbound was backed up past Olive. I understand that you need to improve the traffic flow on forest park parkway, but do not cripple the north and south bound routes. What is going to happen on roads like Skinker when Hanley is closed?

At MODOT's suggestion took Page this morning (coming from St. Charles) all of the way to Kingshighway. The street was not plowed past I-170. So to get to WU I should go N on 170 and get off where? FPP is past capacity. If a road is going to be recommended as an alternate route then it should be maintained

I think MoDot attempts to spin that drivers shouldnt take the Parkway are a waste of energy. The fact is that most believe the sit time there is less than the sit time to get to all of the alternates you suggest. It will be the headache until the east side is completed. As we have all ready the county to the city is like a funnel and with the amount of business community traffic along with heavy residential there is simply no way it cant be more of a headache than the west side was.

I still have not found a safe route all the streets are closed or way out of my way of the places I need to go, it really hurt that Oakland also closed to skinker. Today was awful and had car trouble sitting in the long traffic lines. I had to cut off onto a side street and then that street didn't go thru had to turn around, ended up on Big Bend and tons of traffic...there was no safe clean streets to go.

Up until the eastern half closure, my job was terminated, so I no longer commute east of I-170.

The eastern closure has killed St. Louis traffic. The first few days were worse than the worst day of the western closure ever was. There is no path from East of 270 to downtown. With the western you could drive Clayton all the way down and it took less time than driving out to 270 and around to 44. Now there is just no path. There are no roads that go all the way down town. Manchester is a joke as you cannot get by Hanley without a 20 minute delay at Hanley. Once by it you are again stuck in 2 places. Forest Park Parkway cannot handle the load Clayton did and is a mess. There is just no path. This brings up the question of why Clayton to Kingshighway in front of the zoo is closed. All you are going to do is repave it. This can be done with it open. 200% of your effort should be in getting this short eastern most section of phase 2 open. In fact you should open 1 lane east and west that would stay open during the entire project. This would solve your current crippling of St. Louis!!!!!! With this section closed Clayton is lost as a means to get downtown. With this open you gain 2 lanes all the way.

It is more like 40 mins earlier but you don't have an option for that.

Highway 70 traffic has been negatively impacted - the reversible lanes need to be utilized the way they were intended - eastbound in the morning and westbound in the afternoon.

Unable to shift commute times due to children's school schedule.

There are NO main thoroughfares from the south/east direction on I-64 all we have are city streets and Forest Park Parkway, which is a disaster and we were told not to take after the first day that 30% (your calculations) went that way. I have yet to spend less than 1 hour 30 minutes one way in my commute to work when it typically took 35-40 minutes. I went several ways in an effort to find the best way before the closure, and NO WAY came close to my normal travel time. MODOT stating that all is going good is far from the truth!! Why don't you survey some of the actual drivers on the road. I work with 10 others and all have the same opinion and travel time added to their day. The north/east at least had Page, Olive, Lindbergh we have city streets with tons of lights!!

I take Forest Park Parkway to I-170 in the am, I commute opposite the main flow (west bound), so not many issues except at FP Pkwy and Big Bend.

It's ridiculous that drivers are advised to change their work hours; "shift your commute time." Most employers are not that flexible or can't allow workers to change their hours. I work in the health care industry and have patients who

would be negatively impacted by such a change. MODOT is so out of touch with the day to day reality of workers, it's insulting!

I'm a real estate agent, so I work at all hours, travel most roads. I have to schedule longer drive times to be sure I'm on time.

We travel from Zip 62062 to School in 63131 and then I travel to work in 63103. No matter how you slice it ... it is a bad commute everyday.

I live downtown and I am still trying to find a good route to Westport. Page is good, but I do not feel safe, especially in the evening. The number of open businesses, not counting liquor stores, is minimal, the traffic lights are not synced, and I find myself sitting at red lights with no cross traffic. Why aren't those lights flashing? Also, when using the Forest Park Parkway, there are no signs for where the next gas station is. The first half was bad, but this closure seems to be MUCH WORSE. I wonder if the spokespeople for this project really know how/where St Louisans live and work, also do they understand why Page Ave is under utilized? Mr Waelterman should take this route and see how safe he feels, and consider whether he would like his wife to take that route at 7 pm.

it seems that everywhere you go the stop lights are always red, and the people who don't go the speed limit in the left hand lane block the road. (they are usually on the phone)

I feel it was a poor choice to close Oakland at the same time that the highway closed. Surely, this could have stayed open until the highway was back up and functioning. This only caused more headaches and travel problems. I do not feel this project was well planned at all.

Although we live in the county, we did a lot downtown. The only things we do now are things we have to do for the kids--Upper limits, but other than that, we're avoiding it. The biggest impact has been McKnight Rd. It has always been congested going North getting to highway 40, but now is worse than ever. There is a stop sign at a neighborhood right before you get to the highway that seems to really slow things down. For the last few days it has been backed up well past Litzinger. It's unfortunate because I just need to get to the interbelt and I was really looking forward to getting to it from McKnight.

I can now travel on the new section of 40 to get to work instead of up and down Clayton Road.

The closure may affect my social life to a degree, but I know it's temporary. Keep up the good work

I have always taken I-70 to commute to work. Traffic on 70 did not seem to be effected in the first closure, but the recent closure has effected traffic. I have a hard time understanding why the express lanes are not opened eastbound on 70 in the mornings and westbound in the evenings?

you have cut out all my "short cuts" and "secret ways", i.e. oakland to mackland to weise (thank you!!!!!!!!!!). It is very difficult to get about, and just recently you stopped people being able to travel both ways on Berthold! I am still able to get

to the areas I need to go to or want to go to, but what would take approximately 10-15 minutes, is now taking 1/2 hour to an hour.

vist the area 2 times a month. difficult finding routes when not entirely familiar with area. Would like to see a mapquest type program to assist.

I now do not leave my house until 8:15 to 8:30 becausue of the tie ups on southbound I-170

Because I travel North in the morning and cross I 64 somewhere between Big Bend and Hampton, I must route around the street closures. Not a real big deal until Hanley AND Big bend close at the same time.

I now have to leave about 30-45 minutes earlier than before. Now that the second half of 40 has shut down, things are EVEN WORSE than 2008. Did anyone think this project all the way through? Also - Why did you stop showing the accident stats in your Quarterly Reports? The only reason I can imagine is that accidents are WAY up since the closure. You can't restripe lanes, making them too narrow, then re-route thousands of cars and semi's, and not expect an increase in accidents. Why is no one tracking the personal stress factor? Does it not matter to MODOT?

Having to leave 2 hours earlier & getting home 2-3 hours latter because of the closure is insane. IT SHOULD HAVE NEVER BEEN DONE!!!!!!!!!!!!!!

backup on southbound 170 exiting at Hanley is bad, even hazardous. Need to adjust the light at Hanley to let more traffic exit the highway. Not sure why this has recently gotten so bad unless they changed some signals as it hasn't been that bad since the first week of the 40 flip. It shouldn't take 20 minutes to get from Forest Park exit to Hanley. I have tried leaving work earlier (as much as an hour), same problem.

ACCESS TO HWY 40 WEST OF I-170 IS IMPOSSIBLE BECAUSE MCKNIGHT AND BRENTWOOD TRAFFIC TO THE HIGHWAY IS BACKED UP AT RUSH. THE TRAFFIC LIGHTS DO NOT SEEM CAPABLE OF FLOWING TRAFFIC EFFICIENTLY. THEREFORE, I STAY MORE ON SIDE ROADS AS IF THE HIGHWAY IS STILL UNDER CONSTRUCTION.

I travel to and from work from the Metro East (O'Fallon, Illinois) to Chesterfield, Missouri and travel either 255/270 or 44 which adds around 10 extra miles to my commute and an extra 20-30 minutes commute time and more money in gas.

I must now take manchester to hanley to 170

The closure of the road negatively impacted the amount of business done at my job, and I had been laid off because of it.

This project has been a real pain. MODot is the most incompet branch of this state government.

I don't need the freeway to commute to work, thankfully.

I can get onto 170 Northbound much more quickly! Takes me a little longer to get to the west end areas

The closure has only prevented me from visiting a restaurants during my lunch breaks that are slightly far from downtown.

I have relegated to the expressway and the intersection at Skinker needs some tweeking and soooooon

Honestly, I expected this half to be worse. It isn't the most convenient process in the world, but my drive to work isn't as bad as I thought. Fortunately, I'm not required to be in the office at any certain time. Also, the "back way" (beside the Best Buy in Richmond Heights) around Hanley/Eager is nice. That said, I am looking forward to the new Big Bend exits opening up...hopefully they make the same good time as they did on the western half.

I live on the eastern end of the closure but instead of going to the Brentwood/Hanley area to shop/eat, I go to Illinois.

The major problem I've encountered is the lack of left turn lights along Dale Avenue. It would be helpful, especially at rush hour, to have left turn arrows at Hanley and at McCausland. It is nearly impossible to make a left onto Hanley from westbound Dale Avenue.

I'm retired and do not have a regular commute. I take pains to do my errands between 10 AM and 4 pm when possible. In ant case , I try very hard to avoid being out at rush hour. I used to use Forest park park way a lot; now I use it as little as possible, using a Delmar or Vernon route east to Skinker, and Waterman or Lindell to get to my final destination or crossing point to St. Louis city destinations. This isn't good at rush hours but works well for my chosen travel times. I always plan my errand schedule to achieve several errands at once, for example, gas, post office and grocery store, or a trip to 3 or 4 destinations along Brentwood, like PetsMart, Trader Joe's and or/Whole Foods, Target and/or hardware needs at any of the three stores in that area. This saves time, trouble and gas. I rarely drive more than 2 times a week unless I have volunteer work to do, which I can't usually schedule myself, and sometimes I do errands in conjunction with that to save time and travel.

Satisfaction Comments

The following comments were left in response by those who wanted to leave additional input after the satisfaction questions (for example, *Please indicate your level of satisfaction with how well the public has been kept informed about the New I-64 Project*). The comments are presented as they were received.

I live slightly west of Manchester and McKnight. The traffic has been horrendous on Manchester Rd, especially since I have to make a left out of my street. I know lots of people are using Manchester as an alternative (I know I am). I am looking forward to the traffic lightening up on Manchester now. My family lives in St. Peters so we already (today) have taken advantage of the opening. Great job. It's amazing how quickly it was done. I've enjoyed tracking the progress on your website. It's been educational for my kids too. None of us knew just how much went into demo and construction.

Population of the City is more dense than in a 5-mile stretch of highway in the county -- you didn't take that into consideration. Parking on Lindell along Forest Park should be prohibited 24/7 during construction.

Over the weekend I was traveling west on Oakland and tried to turn left (south) onto Hampton to get to Manchester; however, there was a "No Left Turn" sign posted at Hampton and Oakland. So I proceeded west and -- like everyone else -- hit the barricades at the Oakland Ave. overpass and had to u-turn. I am angry that it was stated in the Post that drivers "ignored" the "Road Closed Ahead" signs -- there weren't any! If I was able to see a small "No Left Turn" sign, I would have seen a Road Closed Ahead sign. Furthermore, how did dozens if not hundreds of other drivers also "miss" this sign. I'm not nearly as angry about that overpass being closed early as I am about you claiming there were signs when there weren't any.

US61 signage was lacking. Effects on bicycle commuting appear to have been ignored for a year. I feel I was not told the truth about: - When work in my back yard would happen and be done. - What was sprayed on the foliage in my yard and what I could do about it.

I am glad the decision to complete the work in 2 yrs vs 6 yrs was made. Now, half of the highway is completed. Also, the coverage on local news has been good in keeping me informed of the progress.

The local media and Dan Galvin have been doing a superb job keeping us informed,

While the new section just opened, we could tell travel East and West via Olive has lightened substantially.

I wish all government-sponsored activities ran this well. Excellent communication and media relations.

While the job, as designed, has been managed well, I question the value of doing all this work to end up with a product no better than what was there before. It's shocking to see new bridges going in no wider than the old bridges, and the elimination of secondary access points (Galleria Parkway, Laclede Station Rd, etc.), that previously allowed us to avoid the horribly congested ones. Also, it's hard to understand why this job takes so long and why there aren't more crews and why they aren't working 24x7.

I think it overall was handled well until now, but I am concerned with the north / south routes coming up.

It's unreasonable to have Oakland Avenue closed to through traffic when there are so few alternatives for city dwellers to travel west into Clayton. It's a perfectly good stretch of road that is not being utilized.

I respond satisfied because obviously the 6-8 years would not have been a piece of cake but the east side is going to be ugly--you have Wash U right at a busy corner of an alternate and you have Forest Park sitting right where 10K people attend the Muny....you had none of those things on the west side.....

I hate that this starts in the dead of winter and bad streets its dangerous

Outstanding management, planning, and implementation. I can only feel disappointed that the additional sound walls were not already in place in this time since it is apparent that beyond the roadway, the project actually was NOT completed earlier than normal in whole.

The western closure was not as impacting as we all feared. I would give you an A+ on this. The eastern closure has crippled the center of the city. I would give you a F--- on this. All efforts must be given to getting 40 in front of the zoo open so that traffic on clayton can flow. This is a high high high priority section of the project.

A bunch of money was spent on the project completion count-down calendars for the highways - they have been turned on for a few days, but not regularly. Why was so much money wasted to not be used?

I take 70 in and the directional lanes need to change to Eastbound in the morning and west in the evening.

When I was a kid, I-294 around Chicago was completed one mile per week. They had to build bridges, move homes and started from scratch. They had almost unlimited labor resources and was quite a project. One Monday they were behind my house moving our neighbor's homes out of the way and grading the roadbed, by Friday they were pouring concrete, and on Sunday the road was stripped, signed, and it was done. Amazing. I assume blending the old and new takes longer.

Closure of Eastern half has impacted me so badly that the quality of my life has been doing down.

The ramps connecting west bound 64 and 170 have work zone speed limit signs of 40 mph but when I travel these I am the only one going this speed and have noticed other drivers upset that I am going this slow. Is this the correct speed or are the other drivers just not paying attention to the posted limits?

The Oakland closure and Dale Ave is a perfect example of the poor communication. I was traveling east on Eager on Jan 2nd and saw the signs for Dale Ave. My mom even pointed it out to me as I was heading to Dale Ave. Well, I ignored the signs because I knew that I could turn at Dale off Hanley...WRONG. I heard about this for the first time today...kinda late. Also, I think the alternative routes should've been better explored. Example, why is Jefferson Ave still not open southbound??? Also, closing Hanley and shifting the traffic to Brentwood was simply a ridiculous thought. Why didn't someone test these routes out on normal people before they just knock down overpasses and expect us to figure a way around it.

I think the western half of I-64 is beautiful!!! I hope all of the new plantings survive and look great for years to come. Thanks for making I-64 (west) beautiful!!!

Sometimes the signs don't make sense or they don't warn you until you're right there. I don't have any specifics examples, but I do remember a couple of times thinking I wish I knew this about 1 mile ago. I do really enjoy the new Western side of the highway.

The opening party was nice to go to, but there should have been people there with info about the carriage rides. We were there looking all over for where they were going to start, waited a very long time, along with many others, asked several people, who ended up giving conflicting info...we finally gave up just in time to see the 2 carriages arrive. 2 carriages for that amount of people? Not nearly enough. And they were small carriages at that. Other than that, we did enjoy being able to walk on the highway before it opened and look forward to doing so on the east part of the highway. Hopefully any activities (other than the bike rides, which were fun to watch) will be better planned and executed.

You have done a GREAT job communicating and getting everything done. My only complaint is the concrete lifeless jungle you have created on hwy 40. I understand home owners may have wanted them (but why did they live there to start with and I question the tactics used to get an agreement), but you have taken away all the charm and life out of the highway. You have even blocked business that I am sure relied on drive-by traffic. PLEASE reconsider creating the concrete vacuum on the other half. It's not that loud, I use to live by it. If it is too loud, move. PLEASE keep the charm and warmth that is St. Louis and don't block it out.

continued problems of grid lock at skinker and forest park continue. Police need to patrol southbound skinker for cars who block private streets and do not keep intersections open. signs are not sufficient and grid locked cars disobey. tickets by the gross are in order till behaviors improve.

While the traffic impacts aren't as bad as I thought they would be, I do not believe that doing this project with the highway open would have taken 6 to 8 years.

This project could have been done one side at a time as many other interstate projects are done without too much of an impact to the timeline.

There are enough people and construction workers unemployed that you could have doubled up on the crews and completed the project in less than two years with the total closure concept and maybe even saved some money as completion of the project sooner would have less of an inflation factor. Marsha marshab80@gmail.com

Obviously the Parkway is a mess. I do not understand why Big Band was not rebuilt at the same or almost the same time as Boland Place and Highland Terrace. That way it would be done now and the Hanley overflow would have a reasonable alternative.

The overhead signs, telling us how long the travel time is to a certain highway, are ALWAYS WRONG during peak times. The changeable speed limit signs on 270 are a joke. If I could possibly do 40 mph at 5pm on 270 southbound, I would take back every nasty thing I have ever said about MODOT. By the way, how much did those "Countdown To Completion" signs cost? Those have worked about 10 days over the past 13 months. Another huge waste by MODOT!

The east closure I don't take to get to work - but I travel that exact stretch for church and MANY other activities. Lots of friends live over there. It is INCREDIBLY inconvenient as all the alt routes are heavily trafficked and MUCH longer. Wish a better plan could have been made for the east close down. The west closure was much easier to find an alt route. But having the whole east stretch closed is killing me!

MODOT deserves credit for how relatively smoothly things have gone so far.

Who ever arranged it had better have been fired for this stupid idea.

you could have done this without shutting down the highway and in far less than 6 years. you can say six years but that is the party line bull crap to get what you wanted. I can NOT believe it would have taken to 2014 to get the job done.

While I realize it would have taken more planning and cost a few more dollars, I do not believe it was as much as you are saying. Also, the region has suffered because of the shutdown. I go to St Louis for work because I have to. I did not purchase my seats for the Cardinals, Rams or the Symphony this year or last. I will consider it again in 2010 after the highway re-opens.

Mo Dot should have completely closed the highway for a yr

Gee, the world didn't come to an end, did it???

I can't wait for this project to be finished. It is sapping our city of people, economic activity and vibrancy. I hope that measures are being tackled to bring people back into the city once this is all over.

I am really tired of hearing from the people who nitpick and whine about everything! Some of the questions asked in the newspaper about the project are so picky!

Very smart to close only for 2 years. The impact has not been as severe as many predicted, and the benefit will be great.

you have caused massive traffic jams on streets and roads not equipped to handle the volume of traffic. this traffic has caused destruction of road surfaces with no thought as to upkeep and repair of the destroyed surfaces. the waste of time daily in my commutes during the first section closure caused me to alter my life significantly for one year when the project could have been done nearly as fast by performing the work sequentially on westbound lanes and then east bound lanes with total closure for the times needed to destroy and rebuild bridges. i hope that the surface is better built than the deteriorating surface of I-170 which has large holes in it already.

MODOT should insist that StL news agencies refer to the interstate by its true name, I-64. 40 is not the name of the interstate, so it's not I-64/40. If anything, it should be I-64/US 40. But no one in St Louis refers to it by anything other than 40 or Highway 40. The superseding name is Interstate 64. Signs, news updates, and other information should refer to it as such.

Just never heard of an interstate/freeway being closed in the middle of a major city; traffic in a city is to be expected...I'm just sayin.

I live right by the intersection of Forest Park Pkwy and Skinker (I live on Waterman). Traffic in the morning, since the Eastern portion of 64 closed, has been a NIGHTMARE! I never take Forest Park Pkwy North, to get to work anymore, and I certainly do not take it coming home. The changing of the stoplight timers has made the situation worse. If you don't want people to take Forest Park Pkwy, the timers never should have been changed--this would have made alot more people take alternative routes instead of majorly clogging Skinker. Again, the second half has become a nightmare. I want to commit an act of road rage every single day. Oh, I forgot to mention, since the 2nd half of the closure, and everyone and their brother taking FPP, I have never heard so much horn honking in my life. Even after I finally make it home, it's honk, honk, honk for at least an hour.

I am strongly dissatisfied that Hanley, Hampton and Big bend overpasses will be closed at the same time. Is this a conspiracy to keep the north and south side residents of Clayton road from getting anywhere. On any given day, Brentwood is a mess and then next nearest route would be kingshighway!!!

1) Screwed up on Lindberg to west bound I64. Right lane goes straight, left lane ends. You have it confusingly marked with the right lane ending and the left lane going straight. Really mixed up here? Accidents waiting to happen. (It needs to be consistent and it's done both ways all over town) 2) East bound I 64 @ I 270 ONLY TWO LANES GOING EAST???? That's nuts!!!! What a mess you have created. You have eliminated a lane and caused a backup & accident zone for out of towners. I thought we were trying to make things better? 2 Lanes on east bound I 64 is going to be a mess for years to come. 3) Spoede both exits suck. East bound exit. Mound of dirt blocks view as you approach intersection at Spoede & Outer Road, Fence totally blocks view of oncoming south bound Spoede traffic, another accident waiting to happen. 4) West bound Spoede entering I 64 has a sharp turn and no barrier. Cars will end up down there and the entrance ramp is too short. I thought you were going to improve it? It's shorter?

I don't understand why the streets in the "Dogtown" were blocked. It is difficult to drive the routes in the area.

AS I have said before, more attention could be paid to routes north and south across the closure. I live north of it near Delmar in U. City and do the bulk of my shopping south of it, mostly in Maplewood and Brentwood. So far, if I follow the precautions and routes described above, I do pretty well, but I really dread the Big Bend closure, which will considerably lengthen my route for my most frequent errands, especially if Hanley Road is still closed.

Alternative Route Comments

The following comments were left in response by those who wanted to leave additional input after the questions about alternative routes. The comments are presented as they were received.

The light at McKnight and Litzsinger was my most favorite improvement. It had been needed for so long and I HOPE it never goes away!

The light at Warson and Ladue serves to slow down traffic quite effectively. You did not ask about the added center turn lane on Clayton. It obliterated the bike lanes so well that I feel my life is in jeopardy riding my bike on clayton when it used to be a most preferred bike route.

I am VERY unhappy, and feel we were deceived that the sound wall would be complete before the re-opening of the western half. As a taxpayer, why does the contractor deserve a bonus payment when procurement of critical materials was not completed on time? I feel the overall project was successful, but I feel this aspect was not at all addressed.

Traffic signals on Union Blvd northbound to I-70, I leave at non peak hour before 6 am, and usually hit 6-7 red lights in less than 3 mile stretch. I find the same with Kingshighway and Forest Park Pkwy.

The S I 270 to W I 64 dedicated entry lane was excellent and I am dissatisfied that it is no longer used. It relieved a cumbersome bottleneck.

It seems that there is no sense of urgency in clearing accidents. Out east, they just push vehicles out of the way and out of the drivers view as quick as possible and then deal with the collision.

the traffice signs on 44 do not ever change - if there is an accident or slow down it rarely tells you about it

Remove or shorten (on the Forest Park Parkway) all of the stoplights on Forest Park Parkway from Euclid to Big Bend - these traffic lights are causing terrible delays on FPP.

I-70 and I-270 the extra lane helped, but on I-44 it made the road to narrow

The extra lanes on the highways probably help but are extremely dangerous!!!! They must be removed immediately upon completion!

The Temporary Lanes are very difficult to drive on. You basically drive on the rough pavement that used to be the shoulder.

During the second half of the project, the congestion on Forest Park Pkwy. has been awful. Much more traffic could be moved through quickly if the traffic lights were timed better. This could be the best alternate route in place of Hwy. 40/64 while it's closed, but instead it has been a parking lot.

Pavement on west bound FP Pkwy between Grand and Kingshighway is pretty rough along the right shoulder.

why isn't there temporary lane addition in shoulder area on I-270 east of I-170? Illinois commuters have been completely ignored by MODOT - to suggest that I-70 is a viable alternative to I-64 as a means to get to Clayton is completely ridiculous.

Traffic light timing changes to support the western half of the construction, now need to be changed back!

From what i see on the morning news, 270 IS HORRIBLE!

I don't have an opinion on this, but I do for the commuting. You have to keep in mind working parents. Believe me, I would LOVE to leave for work earlier or carpool, however, I have two school age children. I have to have a car for emergencies. The kids schedule stayed the same, so does mine. However, now I have to work later to make up for my new start time. I am lucky because my husband picks them up. I can't imagine if I was a single parent trying to accomodate this. Plus, I checked out the bus routes. It takes way too long to get around.

variable speed signs were often not accurate. 511 didn't provide info on alternates to Clayton Road which was my main alternate while the west part was closed.

The addition of an extra exit lane on southbound 270 to 44east has made an extremely positive impact on the traffic flow at that internchange. I hope this will be considered a permanant change after 164 opens.

Trucks still speed on interstates but have narrower lanes. They can be pretty threatening.

metro link needs to handout free "try me"passes with a ridefinder link to single passenger cars lined up at lights at big bend, skinker and debalivere to induce using the metrolink next to them and reduce forest park traffic. I'm sure Wash U students would be ready activist volunteers. Be much more proactive to change st louis attitudes to use light rail and bus. Get more employers to incent the cost of commuting with green methods, carpools and light rail, especially those with parking problems.

The temporary lane additions in I44 and I70 should remain as permanent at the conclusion of the project. Marsha marshab80@gmail.com

Restriping was very dangerous - no shoulders!! Trucks and busses are not staying in their lanes, and wander into mine way too often. The Traffic Response guys seem to be doing a good job, but the incidents are reported on the radio/overhead signs too late to pick an alternate route. And - usually the info is wrong. Wrong lane reported closed, wrong direction on the highway, etc.

I-44 LINE PATCH PULLS MY CAR ALL OVER THE PLACE. IT'S HORRIBLE. NOW I STAY OFF 44 ALSO.

The temporary lanes on 270 and 44 shouls me made permanent after the I64 project is done. They ae more important to traffic flow rather than ahving the empty shoulders.

Since I didn't frequently travel my alternate route before construction, I don't know if impacts were better or worse.

i do not believe the statements that 6-8 years would have been required to accomplish the task if a different method of construction had been chosen. i think that extra time would have been measured in months.

The message boards are awesome through the metro :-) Keep those working...its awesome! The St Louis City Streets Director is completely ineffective...he is totally out of his league.

The signal timing on Forest Park Parkway is a joke. If you wanted people to stay off of it, you should have never timed the lights shorter to accomodate the idiots who continue to use it. This has caused severe backups on intersecting streets (aka Skinker). Common sense was definitely not utilized in this decision

the extra lane on 44 makes it bumpy and uneven, i think its dangerous

I don't reccomend travel on those hwys as the lanes are too narrow and dangerous. The improvements on the wester half do not justify the cost and problems caused. It won't handle more traffic if it narrows down to 2 lanes at any point. We should have left it alone or built a better and larger highway. Improvements that move traffic are minimal. Hay it looks great !

Westbound Dale Avenue at Hanley is a NIGHTMARE at rush hour.

I've not used or experienced the 3rd and 4th services. I have found your on-line service very useful. The signal timing efforts have helped with traffic involving the Parkway, but I'm VERY GLAD that I retired a couple years before this work took place (I worked at the Washington U. Medical School, and I'm pretty sure my commute time would have doubled or tripled. The city of St. Louis has planned especially badly for this trip, with the work on the Jefferson and Delmar Station bridges being done at the same time. It's especially interesting that the work on both of these bridges has taken them at least twice as long as it has taken the state to replace any bridge. I've felt that their notification about these projects to be pretty abject as well. The way I found out that the Jefferson bridge was down almost three years ago has when I started to turn off Chouteau coming west o use it; there wasn't even a warning sign on Chouteau as I recall, just a sudden absence of any street where Jefferson used to be. I assume no one landed in the void below, thought at night it would have been a real hazard.

How to Contact Comments

The following comments were left in response by those who wanted to leave additional input about how MoDOT could best provide them with information. The comments are presented as they were received.

I like the MoDot Emails sent out on a weekly basis

I like receiving email updates on the I-64 project.

Local television news and morning radio has helped us the most.

I tried to map my ride and it isnt working for me.I need to find sites that truly are working with the closings.

The regular emails from MoDOT have been by far the most helpful for me and my family.

our office on Big Bend had a representative on MoDot come to our office with information, hand outs, answered all our questions!

email, email, email road closures BEFORE they are closed.

it doesn't really matter how you notify the public about changes they don't notice them or read them.

It's a shame the countdown signs aren't always "on" and functioning.

I like the flyers that I have seen at my gas station at dale and hanley that have been published and distributed by MoDOT

More display boards on alternate routes

I don't have a TV, get a newspaper and rarely listen to the radio. So I would go look for info online as I heard about it. But it would have been wonderful if perhaps you all would have partnered up with the various business/companies/organizations around the metroplex to equip them with info and alt route suggestions to communicate to their employees (or to at least give them the info/option to sign up for any newsletters/emails that you all might have provided). With the west closure, I did move from the city to west county since 64/40 was what I took every day to work. The people running my company didn't know any more about the project than I did.

I get frequent update information from the Richmond Heights e-mail alerts

See previous comment about calling I-64 only I-64 rather than mentioning Highway 40

The message boards are awesome...they're great :-)

Placed on the road to receive the work one week prior to construction.

I no longer take the daily paper, so that is less useful to me. TV news and on-line notices are most effective for me, though I think that radio is probably useful for many people, who listen while they drive, and the signage about closure on the feeder routes are also very good, because they allow drivers to plan alternate routes on the go, and avoid the centers of real congestion. I'd still like to see more information about north-south routes about the closure, and I think that on future projects the highway department would do well to remember that the St. Louis region goes a very long way north and south, and many people commute or have necessary contacts which require them to use mid-area east west roads on a regular, frequently daily, basis. They could also try to see that St. Louis and other towns near such projects work harder at having their road projects near such construction in better order, that is, finished, before a major route is taken down. The Delmar Project is a prime example of such a misjudgment, even at the times of day I travel, I've seen two block long lines of traffic creeping across the bridge in the single lane traffic. I can only shudder to think what it must be like at rush hour.

Alternative Website Comments

The following comments were left in response by those who responded to *If you heard about the closure through one or more sites not listed above, please tell us which site(s)*. The comments are presented as they were received.

TheNewI64.org

I will add these sites to my favorites and check them out.

KWMU

stltoday.com

i watch info on thenewi64 and am active follower of the changes, i'm not at all standard commuter.

msn.com

Fox News FNN.com, Google.com, Googlemaps.com

mapquest.com and maps.google.com

tv 11

Richmond Heights citizen e-mails

I-64 Project Website Comments

The following comments were left in response by those who responded to *What additional information would you like to see on the I-64 Project website?*. The comments are presented as they were received.

Keep us informed on what "leftover" work you are doing on the western half of the closure (I noticed today that soundwalls are not done yet)

When closed areas (eg crossroads, bridges) will reopen.

I love the maps. Very interesting.

Clear maps showing alternative routes across the closure.

Welcome to the I-64 Survey

We appreciate your time and interest in sharing your opinion. This information is being collected, summarized, and reported to the Missouri Department of Transportation (MoDOT) to help them serve you better. We (Heartland Market Research LLC and HDR Inc) are independent contractors who have been hired to collect this information and provide it to MoDOT. Our only interest in this project is to provide accurate information about what you think, so please respond as accurately and completely as possible.

Most of the questions in this survey relate to the I-64 (Highway 40) project and how this impacts you. In 2008, I-64 will be closed in both directions between Ballas Road and I-170 for construction improvements and re-opened in 2009. In 2009, I-64 will be closed in both directions between I-170 and Kingshighway Boulevard.

We are interested in your opinion over time. We invite you to return and take our survey every month.

Have you taken this survey before?

- ☐ No
 - ☐ Yes
 - ☐ I'm not sure
-

Travel

In a typical week before the closure, how often did you travel on the closed section of I-64 (Highway 40)?

- ☐ Never
- ☐ Very rarely
- ☐ Once a week
- ☐ Two to three times a week
- ☐ Most weekdays
- ☐ Almost every day

In which of the following times do you *routinely commute* in the St. Louis area?
(Select all that apply)

- ☐ Morning: Before 7:00 AM
 - ☐ Morning: Between 7:00 AM and 9:00 AM (peak morning traffic)
 - ☐ Morning: Between 9:00 AM and noon
 - ☐ Afternoon: Between noon and 3:00 PM
 - ☐ Afternoon: Between 3:00 PM and 6:00 PM (peak afternoon traffic)
 - ☐ Evening: After 6:00 PM
-

Please indicate your agreement (or disagreement) with the following statements about how the closure of I-64 (Highway 40) between Ballas Road and I-170 has impacted you?

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
The closure has changed where I shop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I buy gas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed my attendance to events like a baseball game, Forrest Park attractions, and similar activities near the closed section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I eat out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed how often I travel to certain areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Has the closure of this section of I-64 changed your work habits?
(Mark all that apply)

- ☐ No - I still work the same hours in the same location as I did before the closure
- ☐ Yes - My hours have shifted
- ☐ Yes - I now work from another location (home, another office, etc.) more often
- ☐ Yes - I quit my job and accepted one somewhere else
- ☐ Yes - other

Personal Impact of Closure, Page II

Now that I-64 construction is underway, have you shifted your commute time to work and/or school?

- ☐ Yes - I now leave a little earlier (1 to 10 minutes earlier)
- ☐ Yes - I now leave earlier (more than 10 minutes earlier)
- ☐ Yes - I now leave a little later (1 to 10 minutes later)
- ☐ Yes - I now leave latter (more than 10 minutes later)
- ☐ No - I have not changed my commuting schedule to work and/or school
- ☐ No - This question is not applicable to me

If you want to provide more details about how the closure has affected you, please do so here.



Your Opinion, Page I

Please indicate your level of satisfaction with the following:

	Very Satisfied	Satisfied	No Opinion	Dissatisfied	Very Dissatisfied
How well the public has been kept informed about the New I-64 Project?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The timeliness of the information being made available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How alternative travel options have been communicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The traffic flow within construction work zones (other construction where you may travel)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How understandable and accurate are the construction work zone signs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How well are you managing to move around the St. Louis area with the closure of I-64?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years with lane closures?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your overall level of satisfaction with how the I-64 closure has been handled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you want to provide more details about any of the issues listed above, please do so here.

Your Opinion, Page II

The alternative to closing parts of I-64 (Highway 40) for two years was to have ongoing construction for 6 to 8 years. This would have resulted in having various lanes closed to traffic until at least 2014 and possibly through 2016. This alternative would have also cost at least a hundred million dollars more. Considering the alternative, how satisfied are you with the decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ No Opinion
- ☐ Dissatisfied
- ☐ Very Dissatisfied

In a typical week, how often do you commute in the following ways?

[illegible]

Alternative Routes

Improvements were made to designated alternative routes to help address potential traffic congestion. Please provide your opinion on how effective these improvements have been.

	Very Effective	Slightly Effective	No Difference	Slightly Ineffective (Worse)	Very Ineffective (Worse)	I Have Not Noticed	No Idea
--	----------------	--------------------	---------------	------------------------------	--------------------------	--------------------	---------

Temporary lane addition in shoulder area along I-44, I-70, I-270 and Page.



Permanent traffic signal timing and interconnection.



Traveler's information displayed on interstates and available on 511.



I-64 Traffic Response services on non-interstate roads to assist motorists and emergency response staff in early clearance of incidents.



If you would like to provide additional feedback on how effective (or ineffective) these improvements have been, please do so below:

Feedback

What is the best way for MoDOT to get information to you about road improvements and other road and bridge information?

(Mark all that apply)

- ☐ TV News
- ☐ Radio News
- ☐ Radio Talk Shows
- ☐ Newspapers
- ☐ Internet Sites [If selected, the respondent goes to next page; else the respondent goes to the Demographics page.]
- ☐ Receive information in mail (newsletter, etc.)
- ☐ Project email from MoDOT or I-64 Team
- ☐ Project display boards at public gatherings
- ☐ Road signs providing information on construction work
- ☐ Other

Please use this space to provide additional detail about how MoDOT could best provide you with information.



Internet

On the previous page, you indicated that the internet was a good way to get information to you.
Please indicate which site(s) that you visit.

(Mark all that apply)

- ☐ GatewayGuide.com
- ☐ MoDOT's website (MoDOT.org and/or MoDOT.gov)
- ☐ The New I-64 site (TheNewI64.org) [If selected, the respondent goes to next page; else the respondent goes to the Demographics page.]

- ☐ Metro (MetroStLouis.org)
- ☐ DontGetStuck.org
- ☐ GetAroundSTL.com
- ☐ MidMetro4.com
- ☐ Post-Dispatch website (STLToday.com)
- ☐ Post 4 Traffic Online (post4trafficonline.com)
- ☐ Radio AM 550 website (KTRS.com)
- ☐ Radio AM 1120 website (KMOX.com)
- ☐ TV Channel 2 website (MyFOXSTL.com)
- ☐ TV Channel 4 website (KMOV.com)
- ☐ TV Channel 5 website (KSDK.com)
- ☐ Other

If you heard about the closure through one or more sites not listed above, please tell us which site(s).

The New I-64 Site (TheNewI64.org)

What information on the I-64 Project website do you find most useful?

- ☐ Commuter Alternatives (Transit/Carpooling Options)
- ☐ Construction Zone (Ongoing Closures)
- ☐ Map My Trip
- ☐ Newsroom
- ☐ Project Overview
- ☐ Traffic Impacts (Today's Closures)
- ☐ Web cams and/or Photo Gallery
- ☐ None of the Above

What additional information would you like to see on the I-64 Project website?

Demographics

These questions are asked because we need to make sure that we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

Are you male or female?

☐

Male

☐

Female

Please choose your age group

☐

Under 16

☐

16 to 25

☐

26 to 40

☐

41 to 65

☐

Over 65

What was your approximate *household* income in 2007?

☐

Less than \$20,000

☐

\$20,000 to \$40,000

☐

\$40,001 to \$60,000

☐

\$60,001 to \$90,000

☐

\$90,001 to \$120,000

☐

\$120,001 to \$150,000

☐

\$150,001 to \$200,000

☐

More than \$200,000

☐

I do not know

Demographics - Last Page

These questions are asked only to make sure we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

We are interested in traffic flows. It would help us a lot if you could tell us two zip codes. If you are not sure, just leave them blank.

What is your home zip code? (where you are currently living)

What is your work zip code? (if you go to school, please enter your school zip code. If you do not otherwise work, please leave blank).

To what ethnic groups do you belong? (Mark all that apply)

- ☐ American Indian
- ☐ Asian
- ☐ Black or African-American
- ☐ Hispanic or Latino
- ☐ White or Caucasian
- ☐ Other

Submit Survey

BUSINESS STUDY: NEW I-64 ECONOMIC AND REGIONAL MOBILITY

Welcome! This business survey is part of an *independent* evaluation study commissioned by the Missouri Department of Transportation. There are three focus areas – commuting, transportation & shipping costs, and sales & visitation. This survey is intended to obtain important information about the economic implications of the full-closure of I-64 on the local and regional economy.

Thank you for agreeing to participate. **The overall survey results will be summarized in a public report, but your individual data will not be released.**

At the end of the survey, you will have the opportunity to ask for a free copy of our report.

Satisfaction

How would you rate your organization's overall satisfaction with MoDOT's execution and delivery of the New I-64 Reconstruction Project?

☐

Very Satisfied

☐

Satisfied

☐

No Opinion (neither satisfied nor dissatisfied)

☐

Dissatisfied

☐

Very Dissatisfied

Organization Background

Please select the industry that best fits your organization.

How many years has your organization been at its current location?

☐

Less than 2 years

☐

Between 2 and 5 years

☐

Between 5 and 10 years

☐

More than 10 years

How many people are employed by your business at your location?

☐

10 or fewer

☐

11 to 25

☐

26 to 100

☐

101 to 250

☐

More than 250

Please estimate what percent of the employees at your location commuted on the closed section of I-64 before January 2008.

☐

0% - 25%

☐

26% - 50%

☐

51% - 75%

☐

76% - 100%

Commuting

Since the closure of I-64: how frequently do your EMPLOYEES use the following alternative routes?

	Frequently	Sometimes	Never
Manchester Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Park Parkway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clayton Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladue Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olive Boulevard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page Avenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-44	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell us approximately how close your organization is located to the closed sections of I-64.

in miles (0 to 99)

Commuting, Part II

Please indicate your agreement (or disagreement) that the alternate routes provide reasonable access compared to before the closure of I-64.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

**How has the closure of I-64 affected employee behavior for your organization?
(select all that apply)**

- ☐ Noticeably Earlier Commute Times
- ☐ Noticeably Later Commute Times
- ☐ Shorter Total Working Hours
- ☐ Longer Total Working Hours
- ☐ No Noticeable Changes
- ☐ Increased Employee Turnover

**Since the closure of I-64, has your organization offered any new benefits to accommodate changes in commuting?
(select all that apply)**

- ☐ Flextime
- ☐ Encouraged Car/Van Pools
- ☐ Private Shuttles to Public Transit Access Points
- ☐ Subsidized Public Transit Passes: (Bus, Lightrail)
- ☐ Alternate Work Locations
- ☐ Telecommuting
- ☐ Other

Transportation and Shipping Costs

Choose the one(s) that best describes the relationship of your business use of I-64 prior to the closure:

- ☐ Shipped and Received Products on I-64
- ☐ Employees Used I-64 to Commute
- ☐ Patients Used I-64 to Reach Your Location
- ☐ Clients Used I-64 to Reach Your Location
- ☐ Customers Used to Reach Your Location
- ☐ Visitors Used to Reach Your Location

If you ship or receive goods, what percent of shipments travel on I-64?

Before I-64 Closure (0 to 100)

Currently (After) I-64 Closure (0 to 100)

Have transportation costs, excluding fuel costs, increased since I-64's closure?

- ☐ Strongly Agree
- ☐ Agree
- ☐ Disagree [\[Goto question Sales11\]](#)
- ☐ Strongly Disagree [\[Goto question Sales11\]](#)

Increased Transportation and Shipping Costs

You indicated that transportation costs have increased since the closure of I-64.
Have any of the following factors helped raise your transportation costs?

	Significant Increase in Cost	Minor Increase in Cost	No Change	Minor Decrease in Cost	Significant Decrease in Cost
Freight Shipping Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased Travel Time and Delay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less Reliable Shipments and Travel Time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you answered other, please explain.

Sales and Visitation

Since the closure of I-64: how frequently do your VISITORS, CLIENTS, or PATIENTS use the following alternative routes?

	Frequently	Sometimes	Never
Manchester Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Park Parkway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clayton Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladue Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olive Boulevard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page Avenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-44	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Weekly Volume of People

Has there been a noticeable change in the weekly volume of visitors, customers, or patients to your organization since the closure of sections of I-64?

☐

Yes: Lower volume than before the closure

☐

Yes: Higher volume than before the closure

☐

No

☐

Not relevant for my organization

If you replied yes above, please estimate the *weekly* change in visitors, customers, or patients seen by your organization since the closure.

Weekly Number Change (please provide your best estimate **as a number**)

Weekly Percentage Change (please provide your best estimate **as a percentage**)

Have traffic disruptions attributable to I-64's closure impacted your business in any other way?

Weekly Sales Volume

Has there been a noticeable change in weekly business sales (for this time of year) since the closure of sections of I-64?

☐

Yes: Lower volume than before the closure

☐

Yes: Higher volume than before the closure

☐

No

☐

Not relevant for my organization

If you replied yes above, please estimate the weekly change in sales seen by your organization since the closure.

Weekly Sales Change (please provide your best estimate **as a number**)

Weekly Sales Change (please provide your best estimate **as a percentage**)

Promotional Programs

MoDOT has issued nearly \$1 million in business outreach grants to help local businesses during I-64 reconstruction. Has your organization participated in these business access promotional programs?

☐

Yes

☐

No

If yes, please describe the effectiveness of these efforts.

Location

Has the location of your facilities and operations changed due to the closure of I-64?

- ☐ Yes
- ☐ No

If yes, please elaborate.

Future Decisions

Will your future decisions about new investment, expansion or location of your facilities and operations be impacted by the closure of I-64?

- ☐ Yes
- ☐ No

If yes, please elaborate.

Data Collection

Do you collect employee or client/patient/customer travel origin data?

- ☒ Yes
☐ No

If you answered yes above, may we contact you about potentially sharing travel origin data?

- ☒ Yes
☐ No

Would you be willing to respond to semi-annual surveys or interviews to help support the economic assessment of I-64's reconstruction?

- ☒ Yes
☐ No

**If you are willing to help, how should we contact you?
(select all that are acceptable to you)**

- ☐ Email
☐ Mailed Survey
☐ Telephone

On the next page, you will be given the opportunity to provide your contact information.

Last Page of Questions

This information is vital toward helping us understand the economic impact of the New I-64 project in specific areas. Your individual information will remain confidential; only summary statistics and findings will be published in the report. We especially need the information that is in bold.

Name

Email

Organization Name

Address

Zip Code

Phone

Would you like us to email you a copy of our report? (In order to receive the report, you must answer yes to this question and provide your email address in the previous question).

☐

Yes

☐

No

Submit Survey

MoDOT I-64 St. Louis Economic and Regional Mobility Study Business Survey Major Findings

1. Background

The New I-64 project began in 2007. On January 2, 2008, the western section of I-64 from Ballas Road to I-170 was completely closed for reconstruction. The closure is planned to last through the end of 2008, at which time a section to the east will be closed for construction for the bulk of 2009. The project is anticipated to finish in July of 2010. The purpose of this report is to focus on initial business and economic impacts as assessed through the first on-line business survey. This report is an analysis of the survey responses collected from the period beginning February 18th and closing on March 13th, 2008. The survey itself is part of an ongoing effort to periodically evaluate the economic conditions related to I-64's closures, in particular, how the closures are impacting business performance and the methods businesses are taking to cope. Additional surveys will be released approximately every 8 to 10 months, to track these trends over the entire project period. This first survey focused on the conditions prior to the western closure of I-64 and changes occurring immediately after.

The focus areas of analysis from the business survey are:

- commuting impacts on local businesses and employees
- transportation and shipping costs on local businesses
- sales, visitation and economic activity for St. Louis County, St. Louis City, and the areas surrounding the reconstructed sections of I-64

While two months worth of business survey responses are not sufficient to comprehensively capture the near-term effects of the closure, or to extrapolate to longer-term effects. The 369 responses to this online business survey have provided a broad-based response to assess the most immediate reactions from and impacts to the St. Louis business community. The remainder of Section 1 provides a summary of business survey results with greater detail provided in the remainder of the document.

1.1. Summary of Respondents and Overall Satisfaction

- Based upon these survey results, 85 businesses (23%) are located within the I-64 corridor¹.
- 86% of the businesses that completed the survey are located within 10 miles of the I-64 Reconstruction Project.
- An overwhelming 93% of all respondents were satisfied or very satisfied thus far with the performance of the alternative routes to I-64.
- 88% were satisfied or very satisfied with MoDOT's delivery and execution of the I-64 Project.

Business Survey – Selected Preliminary Results	
Total Distributed	6,000+
Total Responses	369
Respondent location (based on zip code, reported by 73%)	
Immediate I-64 region	23%
Satisfaction w/ MoDOT execution of project	
Very satisfied	46%
Satisfied	40%
Dissatisfied	3%
Very dissatisfied	1%

¹ Defined as the 9 ZIP code area containing I-64's Western and Eastern reconstruction zones.

1.2. Summary of Survey Results from Three Key Areas

- **Commuting**
 - A majority of businesses surveyed reported no major changes to employee commuting behavior. 63% of businesses surveyed within and outside of the corridor area responded they did not see a change.
 - Approximately 19% of the total businesses surveyed are seeing later commutes and 21% are experiencing earlier commute times.
 - To help manage during I-64's reconstruction, 38% of respondents noted the use of flex time programs while 16% encouraged car/van pools and 21% allowed increased telecommuting.
- **Transportation Costs**
 - Although 52% of the total respondents indicated transportation costs were not rising, 44% of businesses inside the corridor experienced a minor increase in freight shipping costs.
 - Not surprisingly, the major cost changes for corridor based businesses can be attributed to travel time delays as 94% have realized a significant or minor change in cost.
 - Another 43% of corridor businesses report an increase in cost due to reduced reliability of travel time.
- **Sales, Visitation and Economic Activity**
 - 20% of Corridor based businesses confirm a lower volume of visitors and customers each week, while 10% of businesses outside of the corridor report a weekly decrease in the volume of visitors and customers².
 - 14% of Corridor based businesses reported a reduction in weekly sales, while 8% of Non-corridor businesses cited a reduction in sales.
 - 13% of total survey respondents said future decisions on expansion, new investment, or location of facilities will be impacted by I-64's closure.
 - 16.5% of businesses along the corridor indicated that future decisions will be impacted by the closure, while another 7% inside the corridor have already re-located some aspect of economic activity.

² Please note the survey questions were worded "For this time of year" to account for seasonal customer, visitor, and sales swings.

2. Profile of Businesses Responding

The survey was targeted at businesses within St. Louis City and St. Louis County. The Western portion of I-64 that is currently closed stretches from Ballas Road all the way to I-170 which marks the distinction between the Western and Eastern portions. The point of this analysis is to track the economic impacts of each closure (Western and Eastern) as they will affect businesses differently over time. Each closure will alter route choices and potentially impact shipments, commuters, and sales/customers. I-64 is the major bisecting east-west highway in St. Louis and provides access to significant employment centers in the County and City. Therefore specific questions were geared towards business size, type, commuting patterns, and ZIP code to determine how proximity to the closure and other characteristics are impacting businesses.

Through arrangements with local economic development organizations, the survey was distributed to member business establishments via e-mail and newsletters with reminder notices urging members to participate in the online business survey. A combined distribution list was created including 6,000 contacts from the five economic development organizations that included 3,600 different businesses. The 6,000 entries represented the total number of individual contacts in the combined distribution list. It is important to note that the distribution list included a number of duplicate entries, which are attributable to businesses being members of multiple organizations, invalid contact information, and multiple contacts from the same business. Previous web based surveys have reported failure rates for survey invitations reaching potential respondents as low as 1% to 5% in well defined samples and as high as 7% to 17% in less than well defined samples³. Therefore the final number of people receiving the survey e-mail was likely less than 6,000. The following organizations contributed to the survey distribution:

- St. Louis Regional Chamber & Growth Association (RCGA)
- Regional Business Council (RBC)
- Downtown St. Louis Partnership
- Civic Progress
- St. Louis County Economic Council (SLCEC)

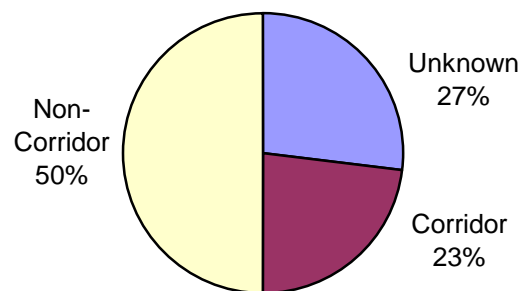
369 separate and complete responses to the survey were submitted. Although this is less than 10% of the total distribution list, we must keep in mind there were additional obstacles that inhibited participation and completion of this web based survey including: e-mail address spelling precision, spam filters, and internet content blockers.

Figure 1: I-64 Corridor and Major Highways



MoDOT <http://www.thenewi64.org/ProjectOverview.do>

Figure 2: Businesses by Location, determined by ZIP Code

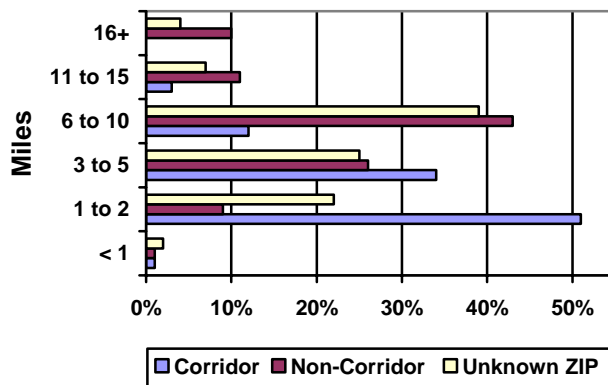


³ Manfreda, Katja Lozar & Vehovar, Vasja "Survey Design Features Influencing Response Rates in Web Surveys" University of Ljubljana

2.1. Distance and Location

On a percentage basis, the businesses responding were fairly uniform in terms of the industry type and the number of employees. Figure 2 shows the majority of businesses responding to the survey are located outside of the corridor area, while 27% of respondents did not indicate their location (ZIP code). The “corridor” has been defined as the 9 ZIP codes that the impacted sections of I-64 either touch or intersect. Coincidentally 23 percent of the total establishments within St. Louis County and St. Louis City are located within the impacted 9 ZIP code corridor area. The relatively high representation of Corridor based businesses taking the survey could be indicative of their close proximity and relationship with the closed sections of I-64. Possibly prompting and motivating such businesses to complete a survey. Respondents were asked how close they were to the western closure in miles. Over 40% of total businesses responding were within 6 to 10 miles of the Western closure. This means that just over 70% of the total businesses responding are within 10 miles of the Western Closure. At the corridor level, 50% of the businesses are within 1 to 2 miles of the closure.

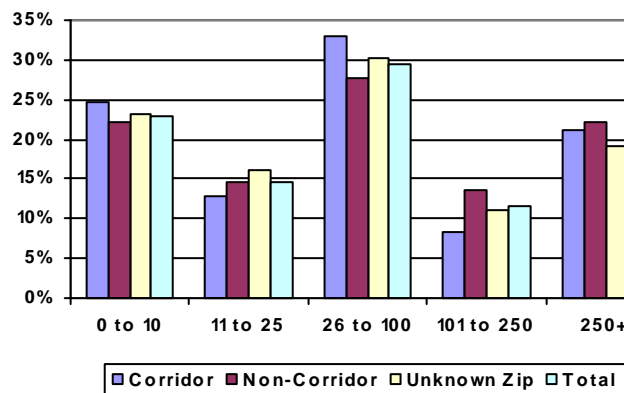
Figure 3: Business Distance to Western Closure of I-64 by Region



2.2. Business Composition

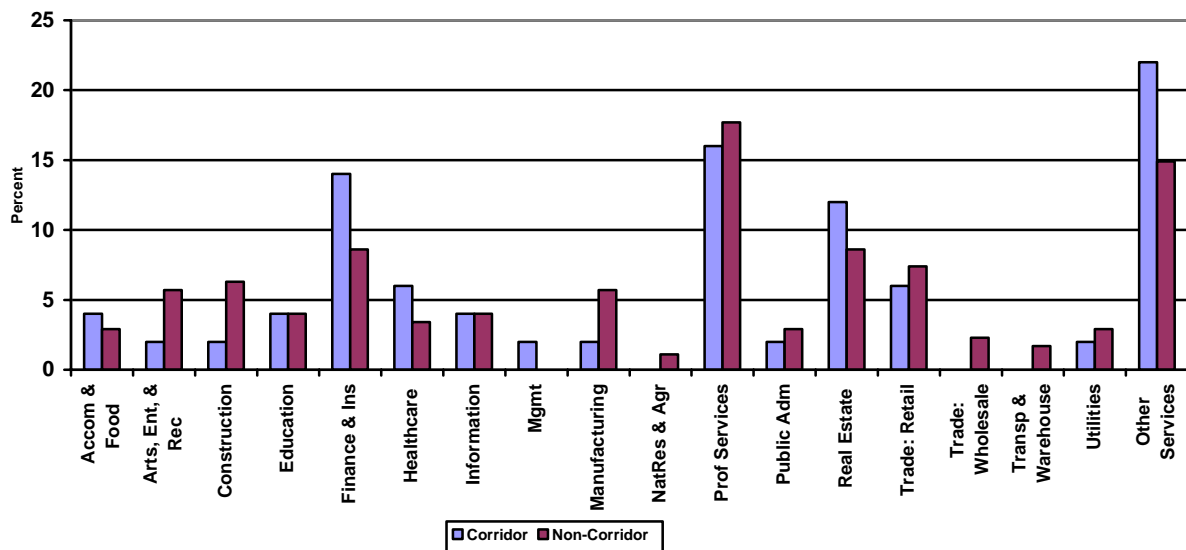
The businesses responding share fairly uniform characteristics in terms of business size, type of business, and employee behavior. Figure 4 below shows businesses within the corridor, not in the corridor, and those not identifying their location share a similar distribution of firms by establishment size (employees per establishment). 30% of all businesses reported having 26 to 100 employees. While 20% of all businesses responding within the St. Louis area reported over 250 employees. The strong response from larger businesses can be attributed to some of the outreach efforts targeting large firms and the potential for larger firms to have greater resources to complete the survey. However, the response by businesses with up to 25 employees should not be ignored as they are 38% of the total respondents. To place these results in context, the businesses located within the corridor provide 24% of all the jobs in St. Louis City and St. Louis County. The total number of jobs within the corridor as of third quarter 2007 was 201,240.

Figure 4 Business Workforce Size by Region



The industry mix of business respondents was predominantly professional, technical, and other services. The majority of transportation, warehousing, and manufacturing businesses are located outside of the corridor. The businesses within the ZIP codes that make up the corridor have a higher concentration of service based industries relative to the rest of the region, for example: health care, finance and insurance, and real estate. Health care services for the corridor represent a large share of the total health care employment for the region, accounting for 47,760 jobs. Although there was a high response rate from professional services, professional services represent less than 10% of the actual employment for the St. Louis region.

Figure 5 Percent Businesses by Industry and Region Responding



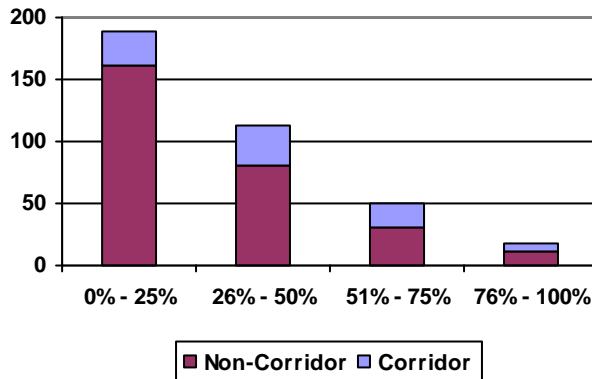
3. Impacts of I-64 Closure

3.1. Previous Use of I-64

Over half the businesses surveyed responded that a low share of their employees (0% to 25%) used I-64 as a primary route for their commute prior to closure. As anticipated, the corridor has a

greater number of businesses reporting that 26%-75% of their labor force use I-64 for commuting. Somewhat surprisingly, only 12 businesses within the corridor responded that 76%-100% of their employees use I-64 for commuting.

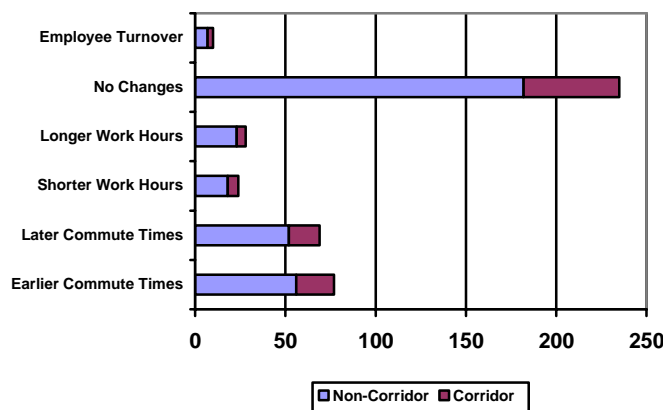
Figure 6: Businesses Reporting Percent of Employees Using I-64 Before Closure



3.2. Post Closure Commute

Respondents were asked exactly how employee commute behavior has changed since January (Western section closed), both corridor and non-corridor businesses responses were similar as 253 businesses out of the total 369 respondents found no major changes (Figure 7). Although there were some minor shifts in the length of the work day (longer and shorter), the most frequently noted change was employees shifting their commute times to either earlier or later in the day. Coinciding with this trend, 38% of businesses offered flextime arrangements for employees with another 21% offering telecommute options to mitigate the effects of I-64 reconstruction. Comparatively modest, employee turn-over was 2.7% for all respondents and 3.5% in the Corridor. Since this was for a period of just under 2.5 months, this effect will need to be monitored over the coming months with similar attention to the upcoming Eastern closure.

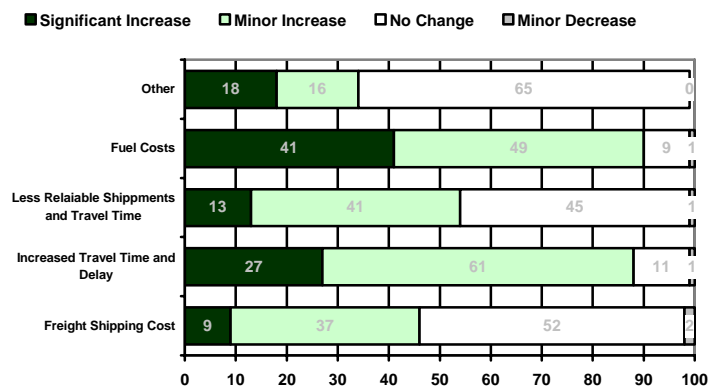
Figure 7 Western Closure Impact on Employee Behavior



3.3. Transportation Costs

Although the measurable commuter impacts to business respondents were relatively minor, respondents consistently noticed an increase in transportation costs. Figure 8 shows a majority of respondents experienced a significant or minor increase in costs related to time travel and delay. Not surprisingly, respondents noted a rise in fuel costs, but this can be only indirectly related to I-64. While the rise in fuel costs per unit is apparent, the actual impacts related to I-64 are a result of longer distances traveled through detours around the Western closure or by an increase in stop and go traffic conditions. Reliability and travel delay are the major sources of the perceived transportation cost both exceeding the change in freight shipment costs. Corridor based businesses reported changes consistent with businesses outside of the corridor, often to a lesser degree, especially in the case of freight costs. The only exception was a 6 percentage point difference between respondents within the corridor experienced a minor to significant increase in cost due to travel time delay.

Figure 8: Respondents feel the following transportation costs have...



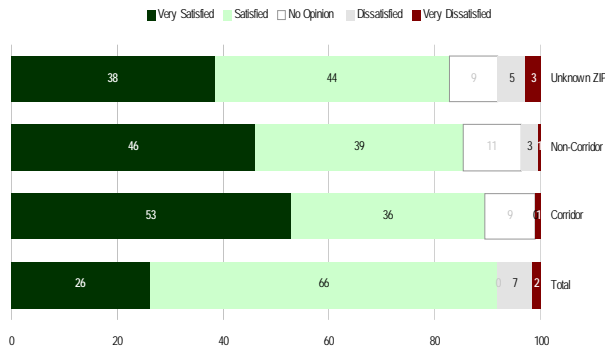
Businesses from the Manufacturing, Wholesale Trade, Transportation & Warehousing, and Utilities industries were assessed separately as they tend to have a greater reliance on freight shipments. Of the 36 responding shipper-based businesses, only four were located within the corridor. Like the total businesses, just over half the shippers agreed that costs were increasing⁴. Travel time costs were cited as the most significant cost increase for shippers. Freight costs for the corridor only showed signs of a minor cost increase so far.

3.4. Satisfaction

Following the closure, the level of satisfaction with the performance of I-64's closure and alternative routes were very high, especially when considering the number of businesses experiencing at least a minor rise in transportation costs. The response was almost identical across all regions as 90% or more felt that the alternative routes for the Western Closure provided reasonable access (Figure 9). Respondents from inside the I-64 corridor expressed the highest levels of satisfaction with alternative routes and 53% were very satisfied with I-64 project performance.

⁴ These results should be considered carefully as isolating this group of businesses significantly reduces the number of observations.

Figure 9: Satisfaction with I-64 Performance

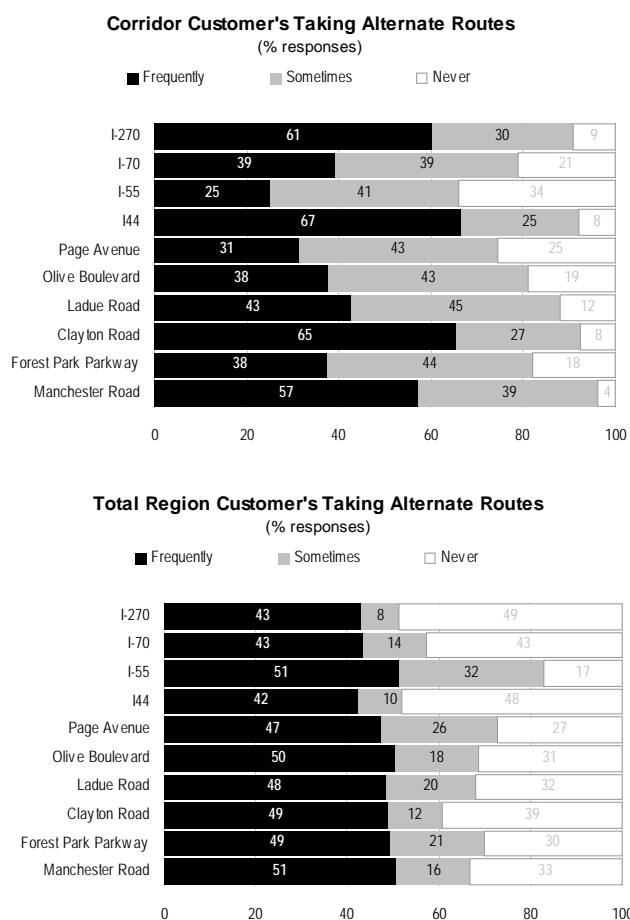


The results indicate (Figure 8) that despite a rise in cost, attributable to an increase in travel time, businesses are coping with the closure and to a large extent satisfied with the project delivery and mitigation thus far. Although there have been proactive steps made by MoDOT and many of the local businesses, the sentiment still seems the same: travel delays and costs are higher but not enough (at this point) to implement drastic changes or cause major impacts. This conclusion may be consistent with the finding that only 10% of total businesses (18% of the corridor businesses) surveyed enrolled in MoDOT sponsored outreach programs.

3.5. Sales and Visitors

Route choice for customers, visitors, and patients showed some substantial variation between the corridor and non-corridor businesses. Customer's route choice was generally spread evenly between all alternative routes for the entire region. The lone exception was I-55 where users would be coming from either the east (Illinois) or the southwest, avoiding St. Louis County and the Western-most portion of St. Louis City, thereby completely bypassing I-64 and most other alternative routes. The customers traveling to the corridor predominantly used I-44 and Manchester Road to the South for East-West travel, Clayton Road for Northern East-West Travel, and I-270 for North-South travel at the mouth of the Western I-64 closure.

Figure 10 Comparison of Customer Routes: Total and Corridor



Eighty percent of businesses reported the change in customers, visitors, and patients were either not relevant or not noticeable. However, 20% of responding businesses (corridor and non-corridor) did report a decline in visitor, patient, and customer volumes compared to previous seasons. Overall the impacts reported by the non-corridor based businesses were not as extreme as those inside the corridor, as seen in Figure 11. The change in sales volume is following the same trends as the visitors, patients, and customers. Where the majority of businesses, 52 percent of the corridor and 58 percent outside of the corridor, are seeing no noticeable decline in sales, compared to previous seasons. Considering the major transportation related (and reliant) industries surveyed are located outside of the corridor, this change in sales might be consistent with the business mix of each area.

Despite the majority of businesses reporting no change in customers or sales, the level of awareness and preparation appears to be high. Where 4 percent of total businesses surveyed have confirmed that the location of their operations and facilities has moved because of the I-64 closure. Looking ahead, 14 percent surveyed said that future decisions on investment, expansion, or location of the facilities and operations will be impacted by the closure of I-64. Considering these results are from the first quarter (3 months) of a two year project, the 14 percent is deserving of future research and attention throughout the project. Therefore the decline in sales and business activities will be researched further, and accompanying analysis will focus on the

quarterly and seasonal changes impacting businesses, especially service based industries, in St. Louis. Lastly, the future considerations will have to address the overall economic conditions impacting St. Louis and Missouri beyond I-64's improvements.

Figure 11 **Changes to Visitors and Sales**



4. Future Steps

Interviews of local businesses are in progress and will supplement the survey data. Thus far interviews have been conducted with representatives from the local convention centers, stadiums, utilities, research centers, shippers, and museums. The interviews will give more insight into business implemented processes, and establish other metrics for measuring I-64's impacts on businesses. Future integration of the pre-closure published economic data with the survey results and interviews will help build a comprehensive understanding of the economic impacts. Future surveys over the next 1.5 years will emphasize questions related to:

- Travel time delay
- Employee turnover
- Sales volumes
- Customer/patient/visitor volumes

5. Conclusions

The overall economic impacts thus far appear too modest, with a few exceptions, and the overall level of satisfaction with the I-64 reconstruction project is high thus far. Businesses are coping with higher transport costs mostly attributable to travel time delays. Specifically, the corridor is seeing greater delays and one-fifth of those businesses are seeing a noticeable reduction in sales and visits. Businesses interviewed thus far have cited some noticeable loss in sales but most

attribute that to the economic conditions affecting the broader U.S. economy. In the coming months, economic data and future surveys will help to better understand preliminary negative economic impacts in terms of:

- a) the magnitude of transportation costs and its impact on productivity and competitiveness;
- b) reduced volumes of retail sales, customers, and visitors especially to Corridor businesses;
- c) measures businesses are taking to mitigate or cope with the I-64 closure, such as flex-time and telecommuting;
- d) the relatively significant number of firms that mentioned I-64's reconstruction could impact future investment and location decisions; and
- e) how transportation and economic impacts will change during the eastern closure of I-64.

The New I-64 Economic and Regional Mobility Study

Quarterly Report # 3

June – August 2008

HDR

Before the Closure

Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.

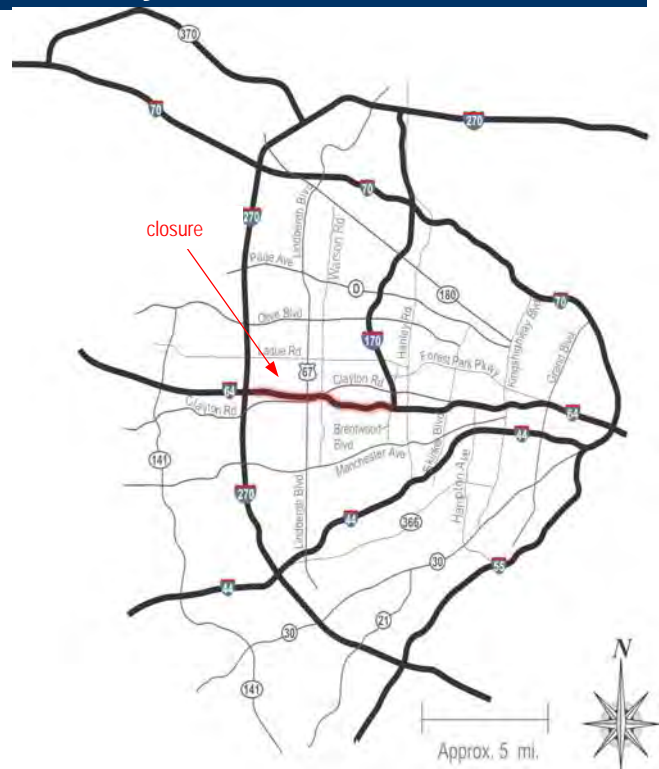
	Not affected at all (0 to 10)	Some extra time (11 to 20)	0 to 5 minutes extra time (21 to 30)	5 to 15 minutes extra time (31 to 45)	15 to 30 minutes extra time (46 to 60)	More than 30 minutes (61 to 90)
Commuting to and from work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Visits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping (grocery, medical, recreation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traveling (through the St. Louis Region)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1. Executive Summary

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (see map) was completely closed for construction. The closure is planned to last through the end of 2008, at which time a section to the east will be closed for construction for the bulk of 2009. Construction is proceeding well in the west closure section.

This quarterly report assesses the period June through August 2008 that includes the 6th, 7th and 8th months of the western closure, evaluating the three key areas of **Project Communications** (MoDOT's provision of information to the public, and the public's response to the project), **Mobility** (the effects of the closure on travel behavior, choices, and traffic flow), and **Economics** (the effects of the closure on businesses within the corridor as well as the economic health of the region). With the western closure now eight months old, findings are beginning to emerge that will be of interest to MoDOT, the St. Louis region and the general public. To date, the research team has found:



Communications (pp. 2-7)	Mobility (pp. 8-20)	Economics (pp. 21-24)
<p>Almost 5,000 participants have given feedback through web surveys, mail surveys, personal interviews, and surveys administered by Motorist Assist and I-64 Traffic Response crews.</p> <p>The public is fairly satisfied with the closure, how information has been communicated, and how they are managing to move around the region.</p> <p>The closure has had varying effects on the public's travel habits, with nearly 3/4 indicating their travel frequency has changed for certain trips and earlier morning commute times.</p> <p>The public reported they are leaving 10 minutes plus earlier (26%) on their commute to work or home, although many trip times are relatively unchanged.</p>	<p>The closure has re-routed approximately 140,000 to 150,000 vehicles per day; travelers have taken alternative routes, altered their travel schedules, and considered alternate modes.</p> <p>Freeway travel times are similar to the previous year and there is a noticeable peak spread and increased traffic volumes on some freeways.</p> <p>The RideFinders rideshare program experienced over a 40 percent jump in comparison to the last year and during the month of July, 9,408 participated in the program. Gas prices have probably contributed to the demand for these services.</p> <p>Users at regional park-and-ride lots have an increased almost 600 vehicles between February 2008 and August 2008.</p>	<p>For both corridor and non-corridor, the taxable sales have declined from the first and second quarters of 2008 when compared to the first and second quarter of 2007. However, the change in taxable sales is not consistent for both regions as the corridor region slightly improves from -6.6% to -4.4%, while the non-corridor sees a further decline in sales for the second quarter of 2008.</p> <p>The taxable sales for wholesale trade are showing positive growth compared to previous years, despite the total taxable sales for the county declining. This could be explained by a shift in consumer spending away from general merchandise stores towards wholesale.</p> <p>The second business survey is currently being drafted and will be sent to the business community working group for comments. The anticipated release of the second online business survey will be in the month of October.</p>

2. Communications

Communications Highlights

The citizens of the St. Louis region are providing input to this research through online surveys, mailed surveys, handouts by Motorist Assist operators, and personal interviews. Highlights gleaned from these various surveys include:

- **Awareness.** From the responses to date, it appears that MoDOT effectively communicated the upcoming closure to the affected population in 2007; pre-closure awareness was reported as very high.
- **Satisfaction.** Respondents are largely satisfied with their ability to travel around the region and with the level of information that has been communicated by MoDOT and others regarding the closure.
- **Information Sources.** TV News appears to be the best way to reach the majority of the respondents, with radio news, newspapers, and road signs also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a portion of the general population does not obtain their information via the internet and other methods should continue to be used to reach them.
- **Traffic Congestion Migration Strategies.** These strategies effectiveness level ranges from 45% to 63% with the ineffective level ranging from 7% to 17%. The lane widening strategy received the highest level of effectiveness while also receiving the highest level ineffectiveness. The other noticeable fact was that 22% reported “No Idea” that the Motorist Assist and I-64 Traffic Response programs were used.
- **Commuter’s Time of Travel.** The shift to earlier commute times is 39% and a shift to later commute times is 13%. No change of time was 30% with 18% reporting not applicable. Almost 50% are not leaving earlier or staying later.
- **Travel Mode.** Initial responses on how the closure has changed people’s mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been, and continues to be, the automobile.
- **Personal Impact.** The closure is affecting people’s trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping, eating out and attending recreational activities. Overall, almost three quarters of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Some residents have shifted their work hours, especially the respondents to the Web survey, who indicated a shift to earlier morning commutes. However, the web survey received a heavy early response when impact uncertainty to the closure was high. This issue will be explored in more detail as progress is made on the I-64 study.

To date, the responses have been fairly consistent over the various survey methods. This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population (other than issues related to online access, which is by definition skewed in the Web survey responses).

Communication Assessment Objectives and Methods

Major Goals – Communication Assessment

Develop and implement survey instruments
Determine effectiveness of pre-closure notification
Measure participant satisfaction for key issues
Estimate changes in behavior
Hear everyone's voice
(obtain generalized sample)

Total Collected Surveys by Method

Web	1135
Mail	700
In-person	100
Motorist Assist	
MoDOT	2312
I-64 Traffic Response	596
TOTAL	4843

Four classes of survey instruments were developed to assess the communication aspects of this project:

- A detailed online survey was developed; participants had the option to complete a brief, medium, or detailed survey in the first five months. Surprisingly, 61 percent of the respondents were interested enough in sharing their opinion that they elected to complete the detailed survey. Links to the survey were placed on both MoDOT's main website and the New I-64 Project site. MoDOT, through its project public outreach efforts, continues to encourage and promote public input via this survey method. Beginning in the 3rd quarter (June 1, 2008), enhancements were made to the online survey instrument to gain additional information and insight on the I-64 project.
- To help obtain a representative sample, a physical survey was developed and mailed to 10,000 respondents in twenty-eight zip codes near the I-64 project. This work was completed during the first quarter and summarized in the 1st quarterly report. This mailed survey was successful in helping achieve a better cross-sectional representation of the region's population. No additional surveys were received during this quarter, so information gained will be reported further in the future annual report. This survey will be administered again early in 2009 and after the I-64 project is completed.
- In-person surveys were utilized to assess public opinions at two major shopping locations in the immediate area of the closure (the St. Louis Galleria near I-64/I-170, and Schnuck's grocery store at Lindbergh Boulevard and Clayton Road). Public Official survey is ongoing with both one-on-one interviews and future contacts through email survey questions. We have conducted interviews at the Zoo on September 20, 2008. Detailed information will be provided in the next quarterly report.
- Project satisfaction measures were also added to the Motorist Assist and I-64 Traffic Response service surveys that are distributed to people serviced by Motorist Assist and I-64 Traffic Response operators. During the third quarter period, 967 - Motorist Assist and 234 - I-64 Traffic Response were received. This source continues to provide a good flow of information.

In order to facilitate comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the "not sure" or "no opinion" percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Communications Results

Use of I-64, Knowledge of the Closure

The survey results indicate that the public was very aware of the closure well before it occurred. 98.4 percent of the online respondents were aware of the upcoming closure in 2007, and since 97.2 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information. The changes between the first quarter and second quarter report measurements were generally less than 1 percent. This information was reported in the second quarter. On June 1, 2008, the web survey was enhanced to gain additional information about the I-64 project. These enhancements were made to further explore potential impacts from the roadway closure.

Satisfaction

The chart at the right summarizes survey respondents' opinions in the area of satisfaction in the 3rd quarter and compares them to the first 2 quarters. As the chart indicates, the satisfaction level is down from the first two quarters based on information from the web survey. However, the information received from Motorist Assist and I-64 Traffic Response surveys is fairly consistent. This could be explained based on the sample sizes (95 compared to 1436) of the two survey instruments. Work zone traffic flow might be a concern since it has fallen below 50%. The other areas still range in the area 60 to 70%. The research team will continue to monitor these public opinions to see if a trend is forming or if the small sample size has impacted the outcome.

Satisfaction Level (Web Survey n=95)	Percent	1 st & 2 nd
Public informed	73	91
Timely information	73	89
2 years vs. 6 to 8 years	71	76
Communication of alternatives	58	83
Overall satisfaction	69	78
Managing to move around area	60	72
Work zone traffic flow	46	69
Accurate/understandable signs	65	76
Satisfaction Level (MA Survey n=1436)		
2 years vs. 6 to 8 years	93	89
Managing to move around area	88	89

The in-person interviews, conducted late in the first quarter at two major shopping locations near the closed section of I-64, showed general agreement with other survey results. Conducting surveys at shopping locations provides a potential correlation link with the economic component of this study. Consistency in data across all survey efforts helps validate that true public opinion is being gained. This information will be compared with the future in-person interviews at the zoo to assess the consistency across different survey instruments.

Personal Impact of the Closure

The table below shows the 3rd quarter responses regarding the closure impact on travel. The travel destination of “attending recreational activities” was added when the web survey was enhanced at the beginning of this quarter. This activity will be monitored as the I-64 project prepares for the East closure, since a number of regional recreational facilities are located along I-64 near this closure. This “attending recreational activities”, “where I eat” and “where I shop” are somewhat split in their opinions of impacts to them. The research team will continue to monitor the survey responses on these travel destinations.

Survey Question – “The closure has changed

Travel destinations	Strongly Agree	Agree	Disagree	Strongly Disagree
Travel to certain areas	41%	34%	14%	11%
Where I shop	23%	28%	29%	20%
Where I eat out	19%	24%	30%	27%
Where I buy gas	13%	12%	33%	42%
Where I work	6%	6%	30%	58%
Where I live	7%	6%	28%	59%
Attending recreational activities (i.e. games, parks, etc.)	24%	10%	34%	32%

“When do you routinely commute in St. Louis” 3rd Quarter compared to 1st and 2nd Quarters Responses

Time of Day	3 rd Quarter	1 st and 2 nd Quarters
Before 7 am	23 (12%)	277 (22%)
7 to 9 am	53 (27%)	334 (27%)
9 am to Noon*	16 (8%)	103 (8%)
Noon to 3 pm	18 (9%)	
3 pm to 6 pm	63 (32%)	376 ((31%)
After 6 pm	23 (12%)	145 (12%)

*First two quarters asked 9 am to 3 pm

Information Sources and Communication Methods

TV News still continues to be best method of distributing information with Radio News, Internet and road signs running a close second. TV News and Internet are more pre-trip information sources while Radio news and road signs are more en-route information sources. It is noticeable that MoDOT’s three web sites are listed as 1st, 2nd, and 6th as sources of information.

Best Way to Distribute Information

Source	Responses
TV News	72
Radio News	60
Internet	58
Road Signs	54
Newspaper	42
Email from I-64/MoDOT	21
Radio Talk	20
Mail from I-64/MoDOT	18
Project Display Boards	16
Others	3

Internet Sources

Source	Responses
New I-64 Web Site	48
MoDOT’s Web Site	42
Post-Dispatch (STLToday.com)	28
TV 5 (KSDK.com)	25
TV 4 (KMOV.com)	20
Gateway Guide	19
TV 2 (MyFOXSTL.com)	17
Metro (MetroStLouis.org)	14
Post 4 Traffic Online	11
Radio 1120 AM	8
GetAroundSTL.com	5
Other	4
Radio 550 AM	3
DontGetStuck.org	3
MidMetro4.com	3

Traffic Congestion Strategies

Various traffic congestion strategies were implemented to reduce regional traffic congestion potentially caused by the displacement of 140,000 to 170,000 vehicles per day during the roadway closure. Public information is being sought on four of these strategies to evaluate to their impact in reducing the traffic congestion. The enhancement made at the beginning of this quarter to the web survey will assist in this evaluation. The effectiveness level ranges from 45% to 63% with the ineffective level ranging from 7% to 17%. The lane widening strategy received the highest level of effectiveness while also receiving the highest level ineffectiveness. The other noticeable fact was that 22% reported “No Idea” that the Motorist Assist and I-64 Traffic Response programs were used.

Effectiveness/Strategies	Lane widening along I-44, I-70 and I-270	Improve Signal Timing and Interconnection	Traveler Information on DMS and 511	Motorist Assist and I-64 Traffic Response Programs
Very Effective	30%	37%	28%	29%
Slightly effective	33%	20%	32%	16%
No difference	12%	9%	22%	15%
Slightly ineffective	7%	11%	3%	4%
Very ineffective	10%	5%	4%	3%
Have not noticed	2%	10%	3%	11%
No idea	6%	8%	8%	22%

Commuters’ Time of Travel

As indicated in this report, the 3rd Quarter web survey was revised on June 1, 2008 that presented different questions to gain additional in-sight and understanding of the public’s opinion on the I-64 project. A time shift in beginning their commute to work or home does shift demand placed on the transportation network during peak period of travel. The following was a new question presented to the web survey participants to help evaluate commuter time of travel:

Shift in Commute Time	Percentage
Little earlier < 10 minutes	13
Earlier > 10 minutes	26
Little Later < 10 minutes	2
Later > 10 minutes	11
No Change Time	30
Not applicable	18

The shift to earlier commute times is 39% and a shift to later commute times is 13%. No change of time was 30% with 18% reporting not applicable. Almost 50% are not be leaving earlier or staying later.

Travel Modes

While the 3rd quarter web surveys are a small sample, it does indicate some mode shifts towards carpooling, walking, biking, telecommuting and transit. Also, the increased carpooling shown in the figures below appears to correlate to the increasing matches reported by RideFinders.

Travel Mode (1st and 2nd Quarters* vs. 3rd Quarter** Web Respondents Only)

Mode / Frequency	Never*	Never**	Few times a week*	Few times a week**	Almost Every Day*	Almost Every Day**
Riding the Bus	94%	89%	4%	10%	2%	1%
Biking	94%	87%	5%	12%	0%	1%
Riding MetroLink	82%	78%	15%	19%	3%	3%
Telecommuting	80%	75%	17%	20%	3%	5%
Walking	88%	77%	10%	20%	2%	3%
Driving with Others	51%	27%	35%	50%	14%	23%
Driving Alone	6%	5%	9%	19%	85%	76%

Demographics

The table below summarizes the responses to demographic questions from the web site only for the 3rd quarter. Previous quarterly reports showed the mail-out survey and the 1st interview data. The entire information will be included in the 1st Annual report. The purposes of supplementing the Web survey with a mail survey was to reach populations without internet access, in order to ensure the research considered the input of as many groups as possible – a representative sample. By targeting these other methods of surveys, the research team continues to ensure a research objective of reaching a more diverse population, especially in reaching more minorities and more females. The next mail survey will be in the first quarter of 2009 and the 4th quarter will have detail information on the scheduled Zoo interviews.

The maps on the following page illustrate the zip codes of survey respondents within Missouri (a small portion of the responses – around 2 percent – were from outside the state). These results are preliminary; future reports will likely aggregate zip codes into larger geographic units with more statistical robustness.

Demographics of Survey Respondents

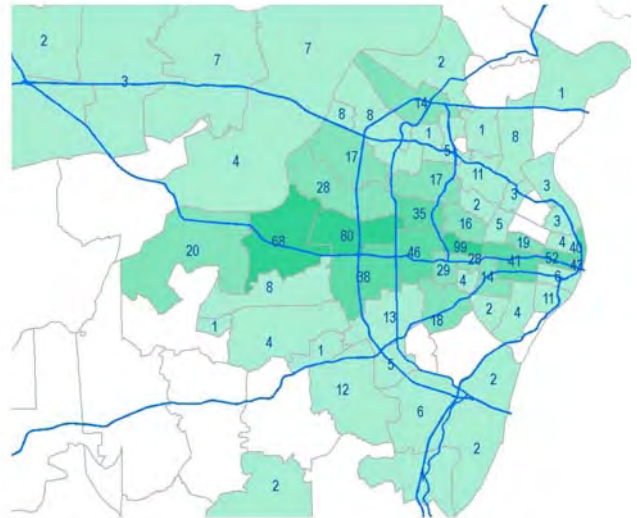
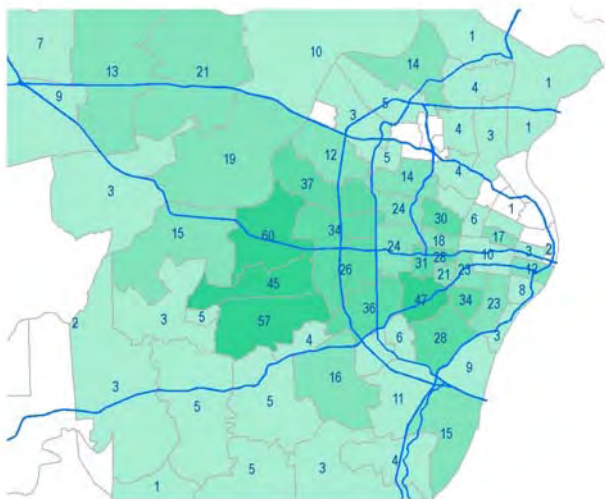
Age	Web	Gender	Web
under 25	17 %	Male	61 %
26 to 40	38 %	Female	39 %
41 to 65	42 %		
Over 65	3 %		
Race	Web	Income	Web
American Indian	2 %	Less than \$20,000	2 %
Asian	3 %	\$20,000 to \$40,000	15 %
Black/African-American	5 %	\$40,001 to \$60,000	15 %
Hispanic/Latino	1 %	\$60,001 to \$90,000	25 %
White/Caucasian	85 %	\$90,001 to \$120,000	19 %
Other	4 %	\$120,001 to \$150,000	9 %
		\$150,001 to \$200,000	10 %
		More than \$200,000	5 %

Survey Respondents' Residence, Commute Destination (by zip code)

Residence Location

Commute Destination

Web
Only



3. Mobility

Mobility Highlights

The study team continued the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. Key findings to date are listed below:

- Approximately 140,000 to 150,000 daily vehicles used the segment of I-64 between Ballas Road and I-170 before its closure. The assessment of where those vehicles have gone is still underway; based on the data in this report, the only large traffic increase seen with available data is on I-44. Volume data is still being evaluated for I-70, I-270, and the many parallel facilities that have been impacted by the closure. More data will be available next quarter, when year-old archive data from some of these facilities first comes on-line.
- Initial analysis of Traffic.com travel-time data has not indicated a significant variation in peak-hour travel times on key freeways in the region; however, additional study is needed before any conclusions can be reached.
- The RideFinders Rideshare program continued to experience increasing growth rates, with a 41+ percent jump in monthly rides in the year between August 2007 and August 2008. I-64 closure is a partial reason for this increase; however, the significant gas price increase has also contributed to people choosing to carpool or vanpool.

Mobility Assessment Objectives and Methods

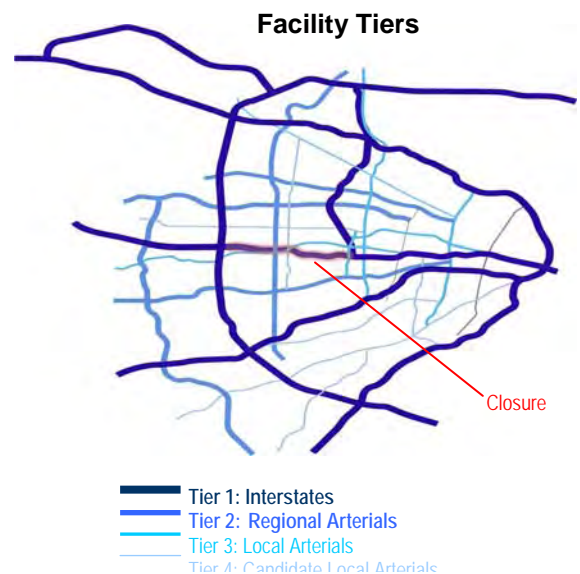
This assessment uses a variety of tools to measure the region's mobility before, during, and after the closure period. The assessment examines traveler shifts and their effects, using a

Major Goals – Mobility Assessment

- Assess the shifts (temporal, spatial, and modal) in travel demand throughout the region
- Assess congestion effects of the closure
- Assess closure effects on transit, ride-sharing, and park-and-ride demand.

multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels, and future reports will continue to hone and refine the assessment.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Tier 4 facilities are being assessed to see whether they should be included in the Tier 3 grouping, or excluded from further analysis. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) are being gathered throughout the duration of the closure to measure its regional impacts.



Mobility data is being obtained through numerous sources:

- MoDOT is providing historical traffic counts through its count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times since the I-64 closure. MoDOT also maintains statistics for its park-and-ride facilities across the state, and is providing monthly count data for its facilities in the region.
- Traffic.com is a commercial Web site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. These data are based primarily on sensors placed throughout the area. Traffic.com archives traffic volume, travel speed, and incident data – in 1-minute intervals – and has an agreement to share this information with MoDOT. The research team developed customized software routines to download, organize, prune, and analyze this data. They also provide travel times on limited arterials in the study's impacted area that are being collected.
- St. Louis County has conducted traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and is providing statistics aggregated on a monthly basis. In addition, Metro collects parking data at its stations with park-and-ride facilities. The research team continues to work with them on gaining access to this information.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data is provided on a monthly basis.
- The research team is supplementing data collection where necessary, including travel-time runs, traffic counts, and field observations.

Mobility Results

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by The New I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right. As the list indicates, one change has been reversed after monitoring field traffic flow operations.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. The research team has recently received a complete list of these improvements, and they will be incorporated into the future annual reports.

Key Improvements to Regional Highways/Roadways

- I-70** Re-stripe from I-170 to I-270 (add lane in each direction)
- I-44** Re-stripe from I-270 to I-55/I-70 (add lane in each direction)
- I-270/I-64** Re-stripe I-270 North of I-64 to Route 340 (add lane in each direction) and re-stripe I-64 Eastbound ramp to I-270 Northbound
- I-270/I-44** Re-stripe interchange's ramps to improve traffic flow
- Clayton Road** Re-stripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road
- Ladue Road** Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road
- Improved Signal Timing** along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park

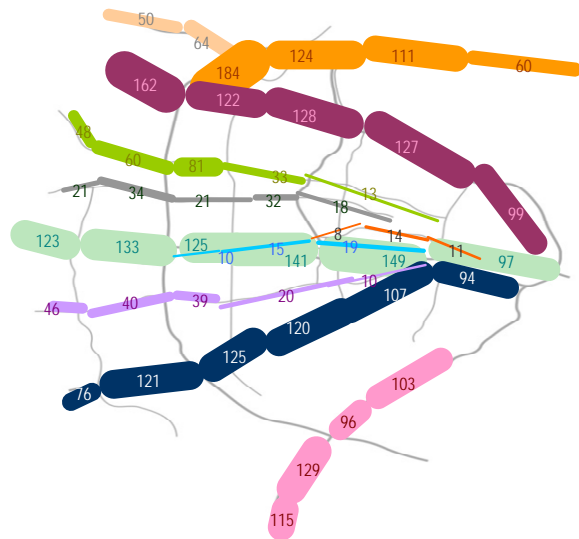
Traffic Volumes

Freeways

Prior to the closure, in baseline 2006, I-64 carried approximately 170,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding “outlier” days). 100 percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

Several sources are being used to evaluate the closure’s effects on traffic volumes - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The map at right, extracted from Traffic.com and MoDOT data, shows east-west daily traffic volumes for many of the key study facilities for the baseline year of 2006. Similar data has been extracted for the key north-south facilities (I-270, I-170, Lindbergh Boulevard, etc.) It is important to note that this information averages every non-holiday, non-“outlier” weekday from 2006, and therefore is not a good base against which to compare the effects of the closure for smaller periods (such as the current quarter under evaluation). However, it is useful for illustrating order-of-magnitude baseline conditions.

**Baseline Daily Weekday Traffic (000's)
East-West Corridors (2006, full year)**

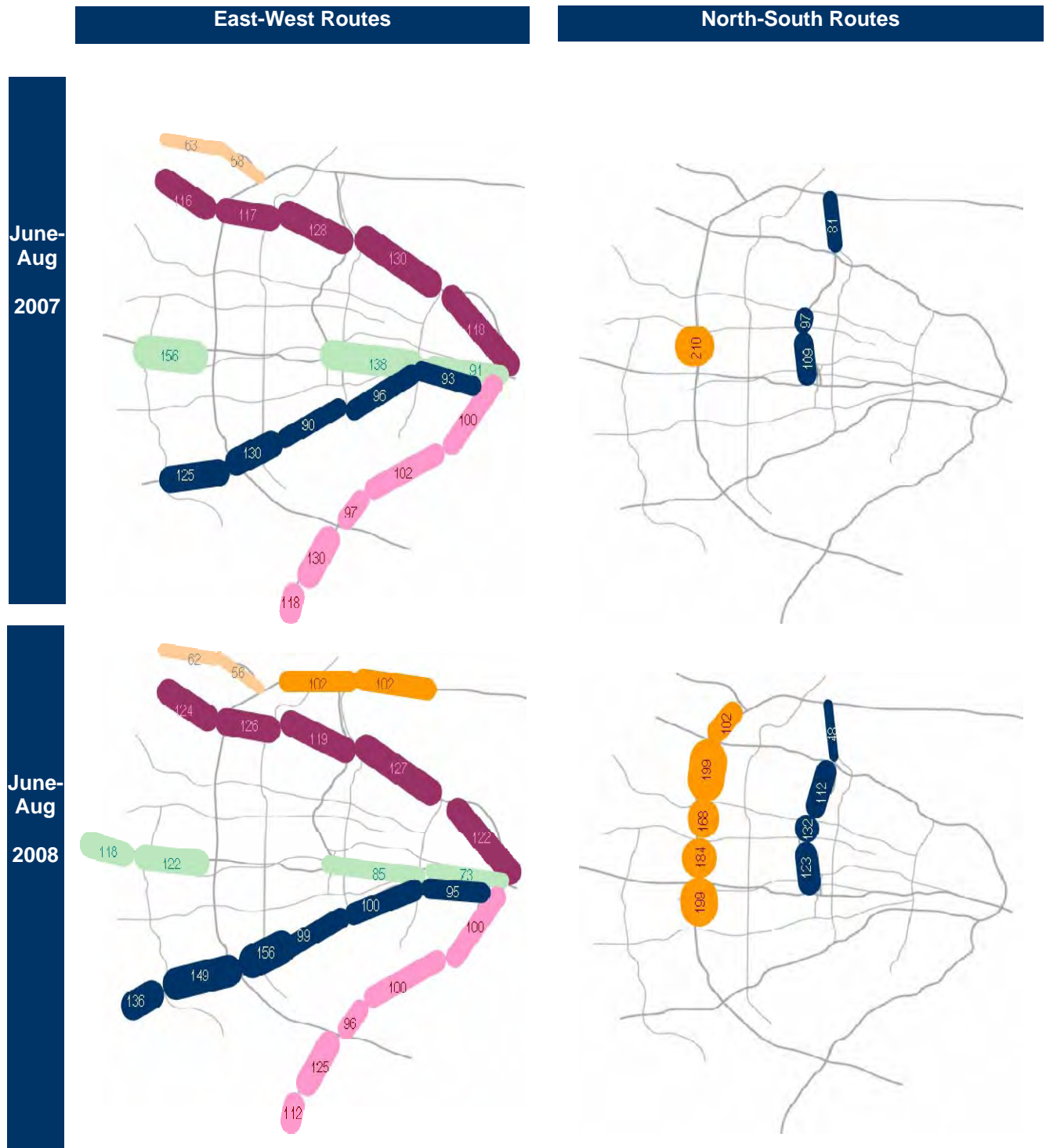


The maps on the next page show a more fair initial comparison for selected segments. They compare weekday June-August 2008 volumes with the June-August 2007 volumes. (Weekend volumes are also being assessed.)

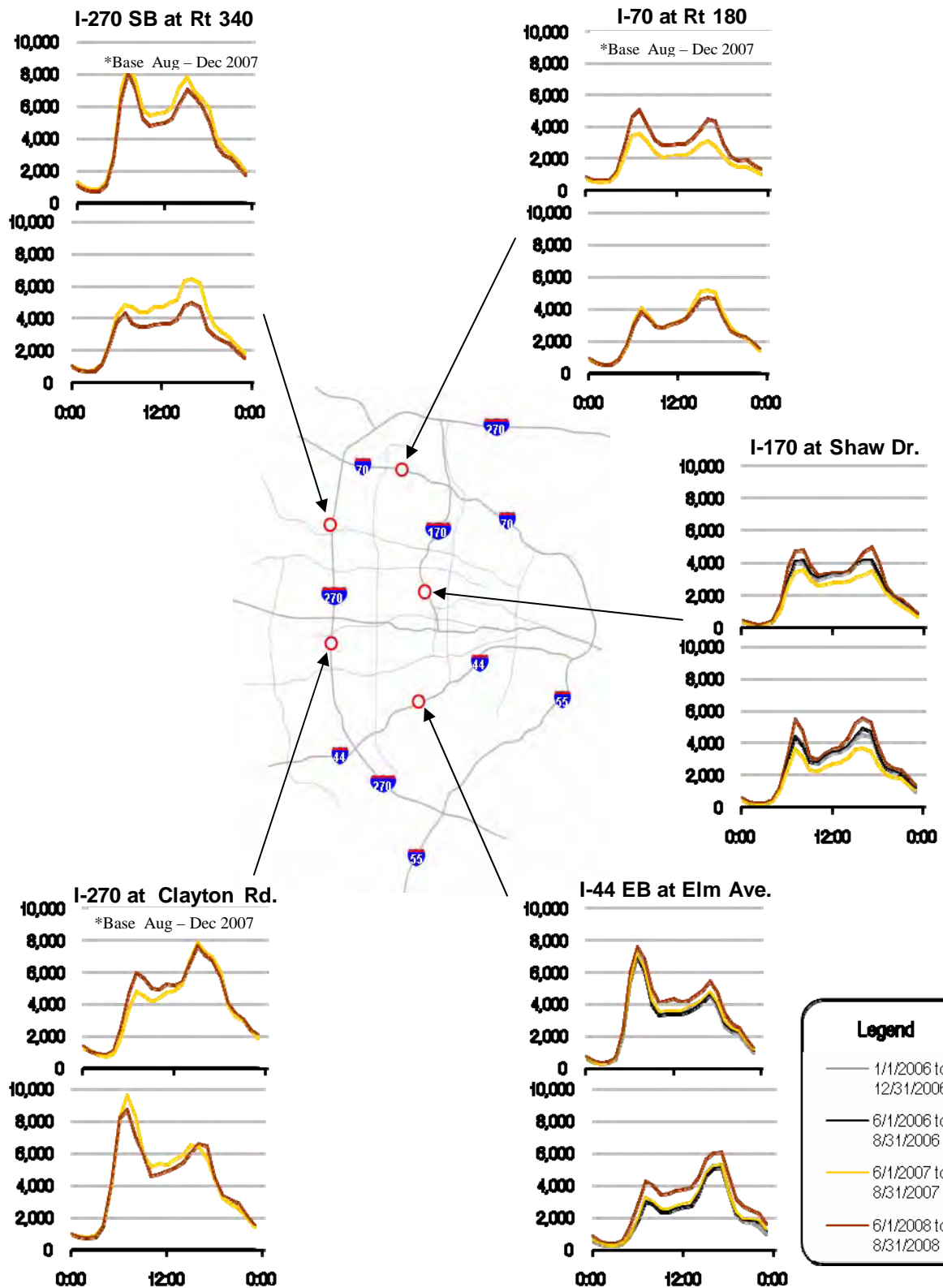
Based on these maps, the following preliminary conclusions can be gleaned:

- Daily traffic volumes on I-64 immediately east of the closure have decreased significantly since 2007 by 53,000 vpd.
- Daily volumes on I-55 appear to be roughly equivalent to those before the closure.
- Daily Volumes for I-44 just east increased by 26,000 vpd just east of I-270.
- Volumes on I-170 between I-64 and I-270 have increased by approximately 14,000 – 35,000 vpd compared to the previous year.

Daily Traffic Volume Comparison (000's) on Selected Segments, 2008 vs. 2007 (PRELIMINARY)

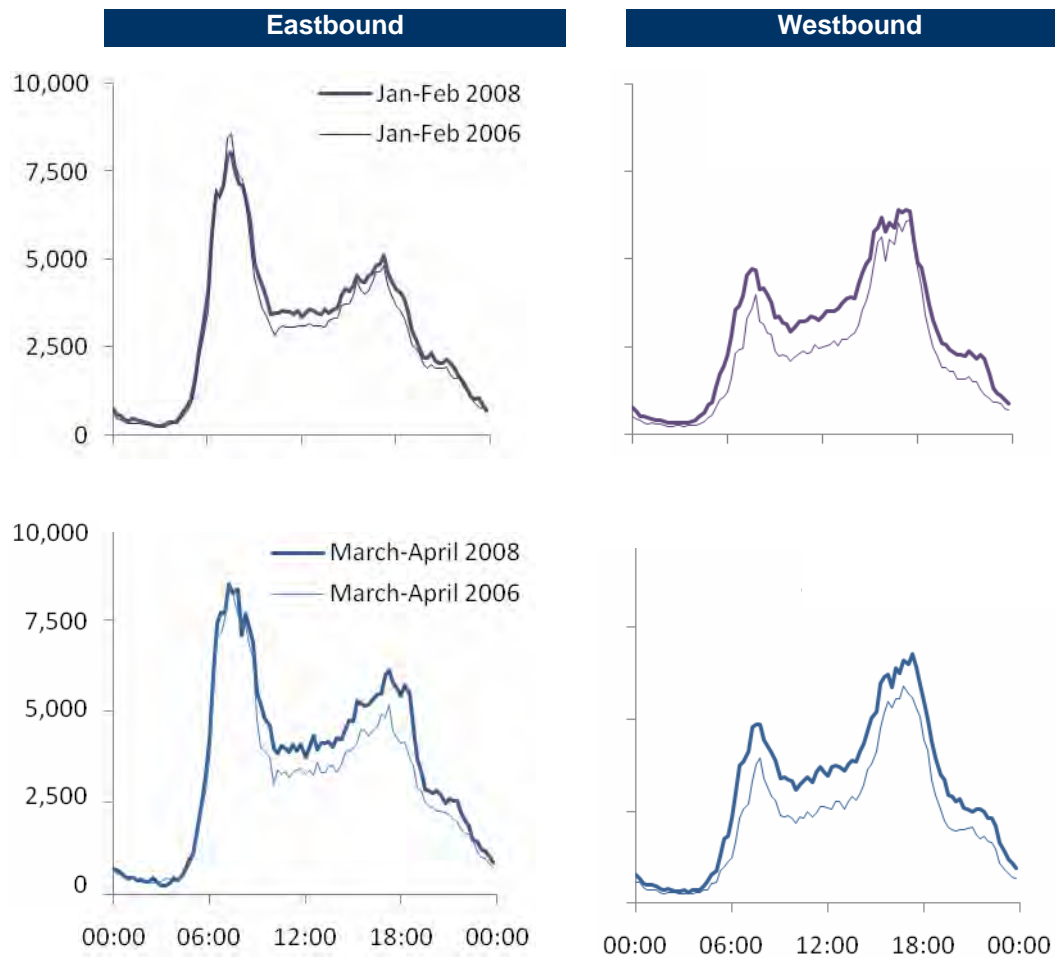


Below is the volume profile from select locations around the city. For reference, AM peak is top graph and PM peak is lower graph.



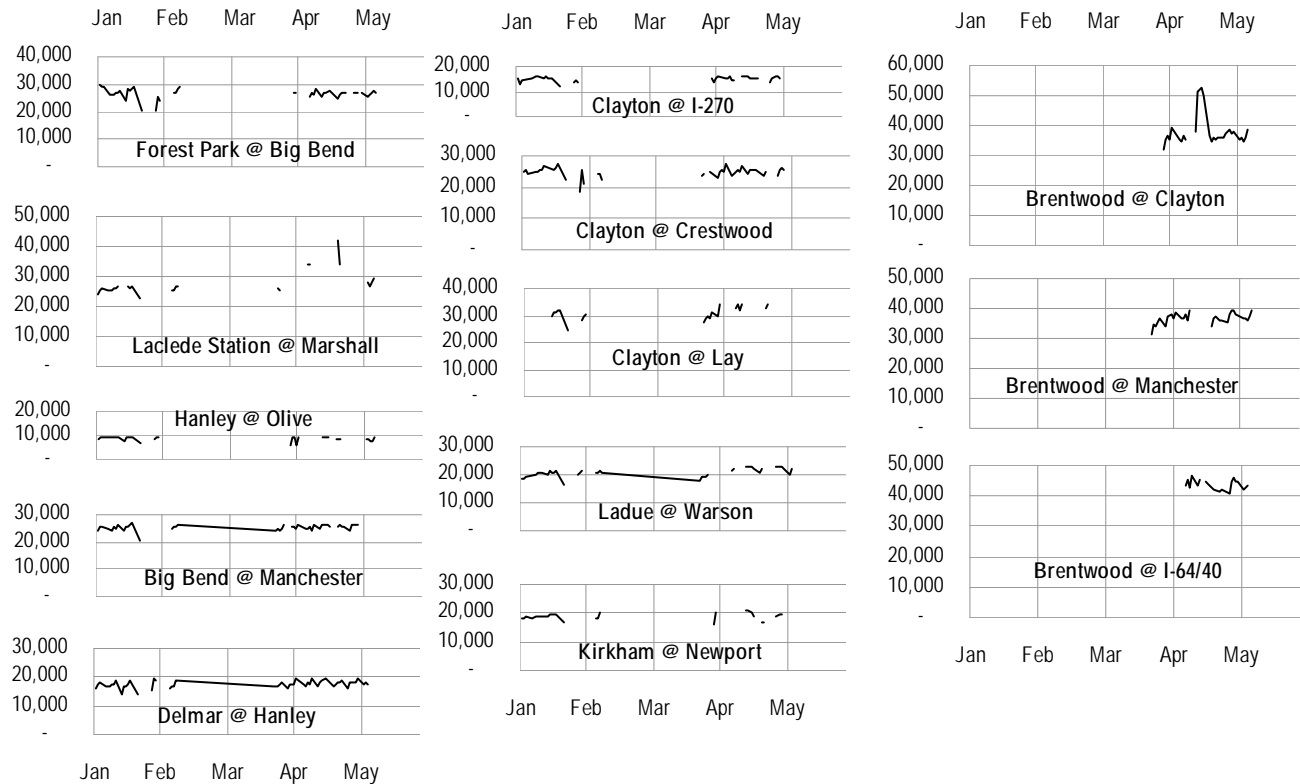
The Traffic.com data is also being examined at more refined resolutions, from hourly totals all the way down to five-minute volumes. The graphs below illustrate how the effect of the closure on the **duration of the peak period** is being examined. As the graphs indicate, overall volumes on this segment have generally increased, but the peak periods have spread as well. Data from this detection site was impacted during this quarterly reporting period, so we are just using previous information to show what data is available. Further analysis of this spread will be undertaken in the annual reports at various sites.

Example 15-Minute Traffic Volume Profiles I-44 at Elm Avenue



St. Louis County has been tracking arterial volumes since the I-64 closure. The graphs below illustrate ADT data available from the County and are under study to extract trend information. For many days on which data are not plotted, volumes are only available for one direction. No significant conclusions can yet be drawn from these data, but they will continue to be a resource as the study progresses. This information was presented in the 2nd Quarterly report and will be updated as additional information received.

Average Daily Traffic Volumes Recorded by St. Louis County, 2008



MoDOT also collects volume data from many of the arterials in the region using its ACTRA system tied into signalized intersections. The graphs on the following pages examine volume trends on many of the key arterials during both peak hours on a monthly basis since the closure, including a comparison to a pre-closure baseline. The table and graph below presents a sample summary of data collected in the 2nd Quarter. **We continue to capture this information and will present it in more detail in the annual report with study conclusion.** Several limitations of the data should be noted:

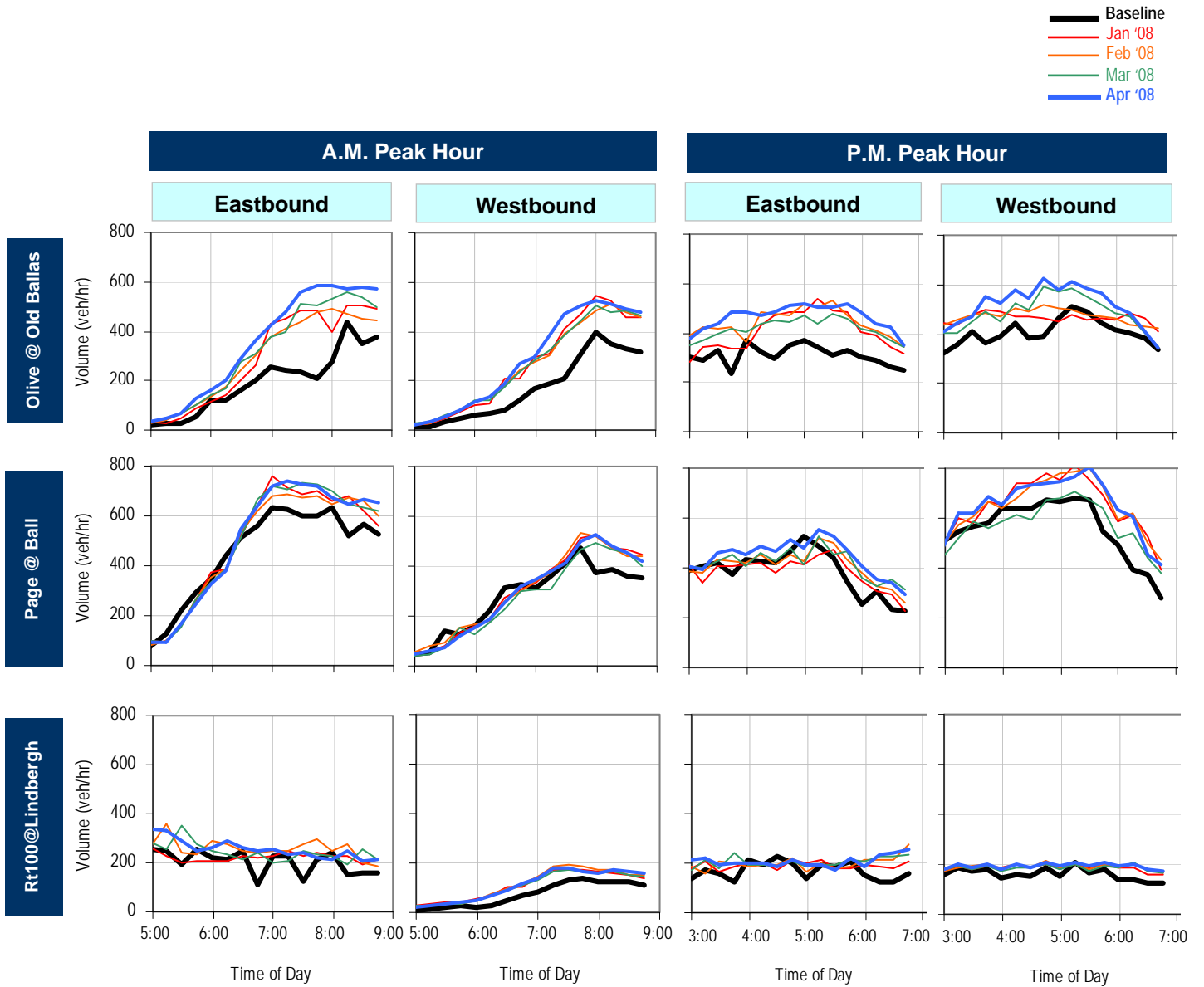
- The pre-closure data is from a single day, in most cases collected in November or December 2007.
- During the closure, not all days had available or usable data.
- This data reflects only through volumes approaching intersections; hence, right- and left-turning traffic is not included.

In spite of these limitations, the data reveals some anticipated patterns, such as volume increases on Page and Olive, which run parallel to the closure. Archiving and studying these data beyond the closure will help in understanding the closure's effects.

Summary of ACTRA Volume Reporting Since Closure, Key Arterials

	A.M. Peak Period	P.M. Peak Period
Olive	Eastbound and Westbound: 50% to 80% increase at Old Ballas	Eastbound: 30% to 50% increase Westbound: 14% to 27% increase. (p.m. volumes higher than a.m.)
Page	Eastbound: 7% to 11% increase. Westbound: up to 10% increase (a.m. volumes higher than p.m.)	Eastbound: 15% increase (after initial slight dip of -0.6%) Westbound: 3% to 17% increase
Manchester at Braeshire	Eastbound and Westbound: 4% to 17% increase	Eastbound: 6% reduction (after initial January dip of 20%) Westbound: 9% increase (after initial dip of 7%)
Manchester at Lindbergh	Eastbound: 10 to 27% increase Westbound: 44% to 53% increase	Eastbound and Westbound: 12% to 22% increase
Rte. 141 at Howard George	Southbound: 4% to 20% increase Northbound: dip below pre-closure (after January increase)	Southbound: 5 to 10% decrease Northbound: 4 to 7% increase (except February dip of 7%)
Lindbergh at Conway	Northbound and Southbound: 20% to 40 % decrease	Northbound and Southbound: 20% to 40 % decrease
Lindbergh at Manchester	Southbound: 200% average increase Northbound: 40 to 65% reduction	Northbound and Southbound: 40 to 65% reduction

East – West Routes



Travel Times

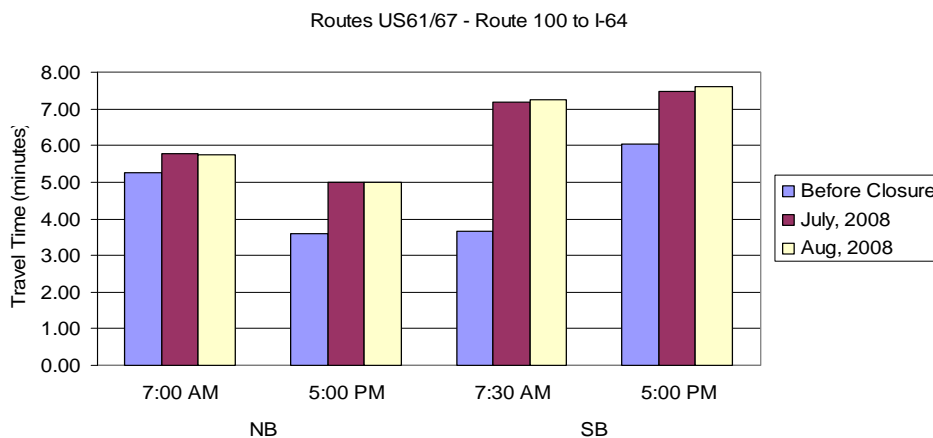
The research team is using Traffic.com's archived speed data to calculate travel times on freeway segments throughout the region. The table at right contains some of the data extracted. P.M. peak-period data are averaged over the current quarter, and compared with the last five months of 2007. The travel times in general do not show major variations from the pre-closure data, and also generally indicated faster travel times. The causes of these results will continue to be investigated, and could be attributable to a combination of peak-spreading, re-routing due to the closure, increased fuel costs, and other factors.

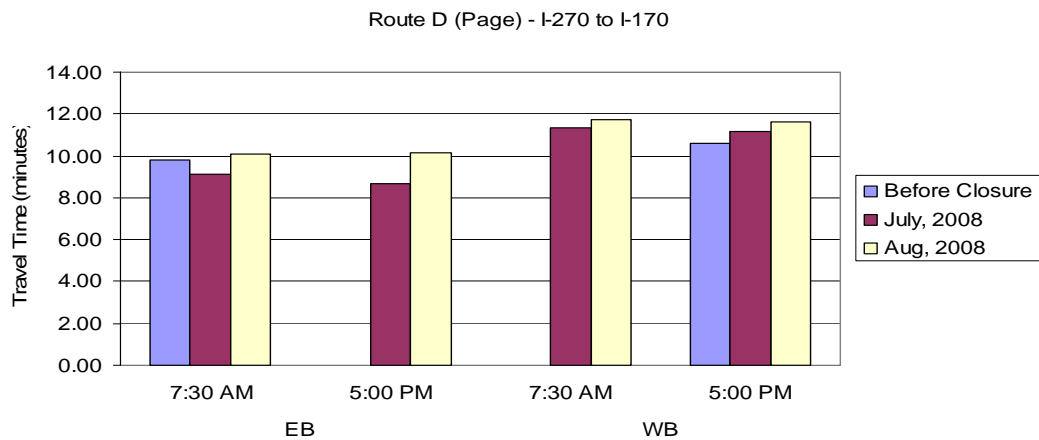
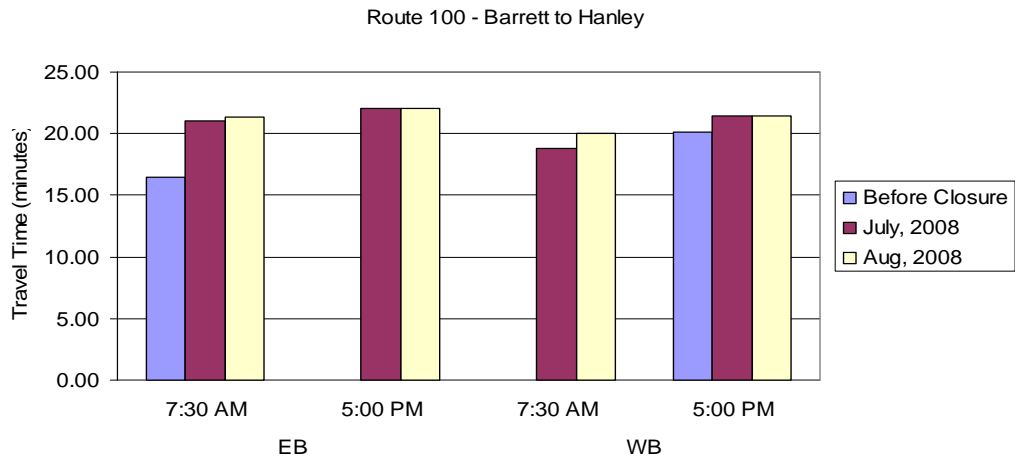
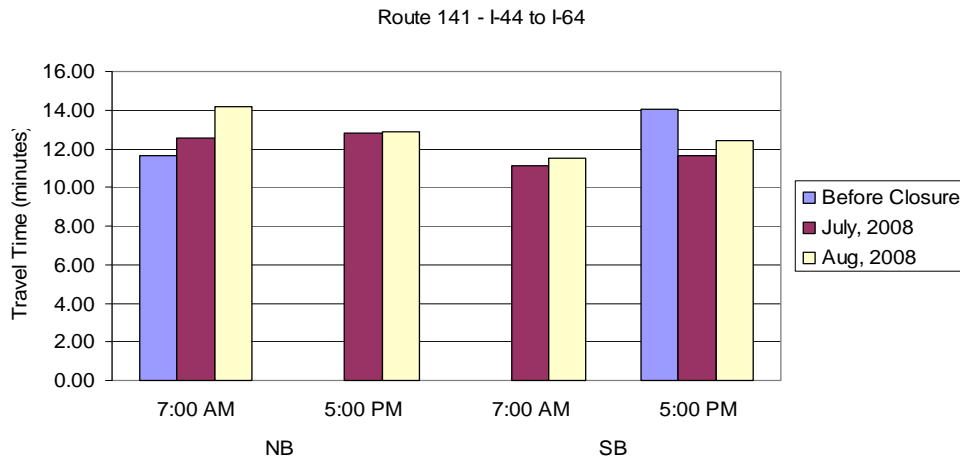
**Travel Times (min),
Selected Freeway Segments
(Preliminary)**

	Miles	Travel Time (min), P.M. Peak Hour	
		Aug-Dec '07	Jun-Aug '08
I-70 from I-270 to I-170			
EB	3.7	5.6	5.8
WB	3.6	6.3	5.7
I-170 from I-270 to I-64/US 40			
NB	3.7	7.9	7.1
SB	3.8	7.9	7.3
I-270 from I-70 to I-64			
NB	3.5	9.2	8.0
SB	3.5	9.8	7.8
I-270 from I-64 to I-44			
NB	6.5	7.3	6.6
SB	6.6	12.7	9.6
I-44 from Rte 141to Kingshighway			
EB	3.0	13.6	12.7
WB	3.0	12.0	11.6
I-64 from Rte 141 to I-270			
EB	3.3	3.5	3.5
WB	3.3	2.9	3.0

Arterials

As stated above, MoDOT has produced a series of e-mail updates that provides key traffic information to drivers for use in planning their commuting trips. The information for four of the major arterial routes (available since July '08) is being supplied to MoDOT via Traffic.com and has been monitored by the research team as general indicators for arterial traffic flow near the closure area. For purposes of this quarterly report, a time period for each arterial was selected as the peak hour for comparison purposes. These charts below include the times selected for comparing the before and after closure travel times. The research team will be verifying these travel times in the field during the fourth quarter of 2008. Once more data has been collected; a more robust analysis will be completed.





Park-and-Ride

The table below summarizes one year's worth of quarterly parking counts at MoDOT's Park-and-Ride lots in St. Louis County and neighboring counties. Updates to this table will be made as information becomes available. May's data was not available, but is being supplied and the quarterly report will be amended. Users at regional park-and-ride lots have an increased almost 600 vehicles between February 2008 and August 2008.

MoDOT Park-and-Ride Volumes

County	Lots	Total spaces	Vehicles Parked in Lot						
			Feb07	May07	Aug07	Nov07	Feb08	May08	Aug08
Franklin	6	413	295	205	189	175	168	167	202
Jefferson	11	962	321	337	379	386	367	430	448
St. Charles	12	1110	427	403	283	315	301	415	566
St. Louis	6	792	519	540	582	451	493	579	697
Total	35	3277	1562	1485	1433	1327	1329	1591	1913

Transit

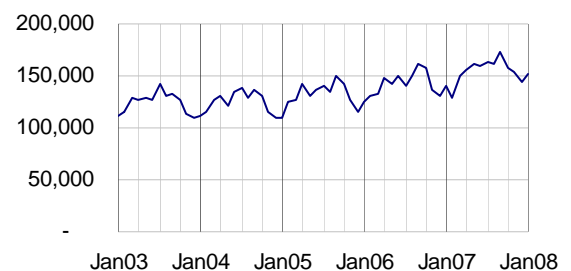
At the time of this report, Metro statistics are only available through January 2008. The table and graphs at right summarize some key statistics regarding Metro usage. Ridership on the total Metro system in January 2008 (the first month of the I-64 closure) was over 9 percent higher than ridership in January 2007. However, as the graphs indicate, Metro ridership has been steadily increasing since at least mid-2005, and the increase seen in comparing January 2008/2007 data does not appear to substantially deviate from this trend.

Anticipated statistics from Metro will shed additional light on any closure-related transit trends. Information from Metro has not flow as desired based on the required time by Metro staff to put the information together. The research team understands the demands of Metro staff time and will make a concerted effort to gain detailed information for inclusion into the annual report. The annual report will be where most study conclusions will be made.

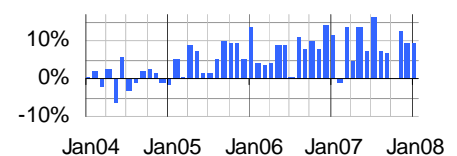
Key Transit Statistics

	Jan '08 ridership	Increase over Jan '07
MetroBus (fixed route)	2,723,970	9.1%
MetroLink (passenger rail)	1,944,205	9.4%
Call-a-Ride (paratransit)	60,167	8.4%
Total Metro system (includes services not listed)	4,733,423	9.3%

Total Metro system – equivalent daily riders per month



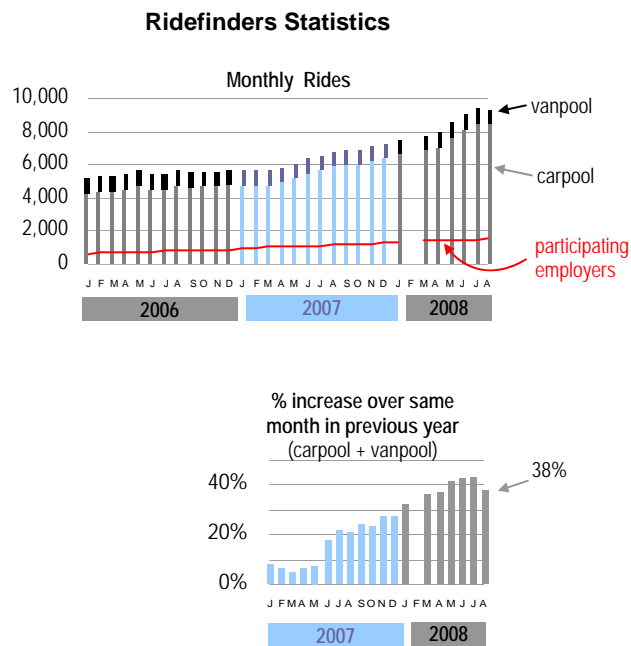
Month's increase over previous year



Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The graph at right shows historical ridership for RideFinders, and indicates a general upward trend since the second half of 2007. The lower portion of the figure further illustrates this jump in ridership by indicating, for each month, the percentage increase over the previous year. As the graph indicates, one-year increases in 2008 have been over 40 percent, much higher than in 2007. Obviously, some portion of these increases can be attributed to rising fuel costs, but the I-64 closure also has been a likely contributor.

The research team is working with RideFinders to obtain more details to help correlate rideshare activities with I-64 closure statistics.



4. Economics

Economics Highlights

Major Components of Economic Analysis

Analysis of pre-closure and current conditions

Determine the effectiveness of the reconstruction and traffic management strategies on the local economy

Identify the strategies that are the most appropriate for near-term and long-term economic vitality based on special data tabulations, survey results, and individual

The primary highlight for this quarter is collection and analysis of the special data tabulations from Missouri Economic Research and Information Center (MERIC) and other published data to quantify the economic conditions before and following the Western closure of I-64. To date, MERIC has provided HDR with economic data for first quarter 2006 and all four quarters of 2007. Given the time lag in available economic data indicators, this quarterly report will only focus on the currently available and collected data for the first two quarters of 2008.

Economic Analysis Progress

Current activities to date include:

- Collection of the identified published economic, demographic, and fiscal data.
- Received from MERIC special ZIP-code-level data for the first quarter of 2006 and all four quarters of 2007. The economic data included: industry employment, wage, and establishment data tabulations.
- Analysis of Second Quarter 2008 Taxable Sales Data from Missouri Department of Revenue (DOR)
- Completion of the first business survey and interviews
- The final results of the survey were presented on July 17, 2008. The results were discussed with MoDOT and the attending local and regional economic development/business organizations.

Economic and Fiscal Data Analysis

The preliminary analysis of the first custom economic dataset from MERIC has been completed. Once more recent quarterly data is available from MERIC, and other published sources, our analysis will extend the precondition analysis forward through the second quarter of 2008. The preconditions analysis is complete and has established a baseline for conditions before construction. Table 1 below shows the total employment, establishments, wages, and taxable sale by region. Between the third and fourth quarter of 2007 there was positive growth in employment, wages, and subsequently sales for both the corridor and non-corridor regions of St. Louis City and St. Louis County, while there was a small decline in the number of establishments.

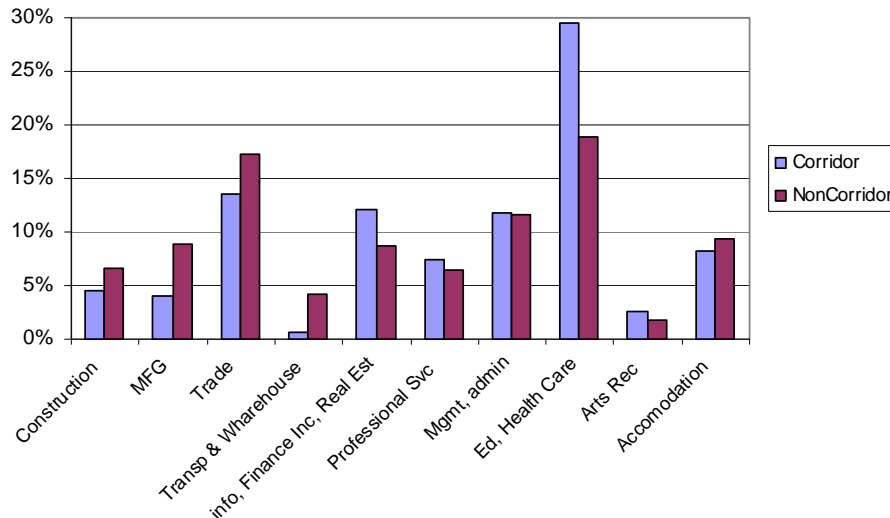
Table 1 St. Louis I-64 Corridor and Non-Corridor Economic Profile

	3 rd Quarter 2007		4 th Quarter 2007	
	Corridor	Non-Corridor	Corridor	Non Corridor
Jobs	201,200	628,100	205,271	632,136
Number of Establishments	9,405	31,445	9,333	31,318
Wages (\$ Millions)	\$ 2,471	\$ 6,753	2,785	7,541
Total Taxable Sales (\$ Millions)	\$ 927	\$ 4,167	1,016	4,420

Source: MERIC and Missouri Department of Revenue

Figure 1 shows the employment by industry share for each region. In terms of employment, the corridor region has a heavy concentration in finance and real estate, which will be tracked considering national trends in banking, finance, and real estate. In addition the high percentage of health care within the corridor is unique as its services are not like other commodities, and will be followed closely in the following quarters.

Figure 1 Employment by Industry Share: Corridor and Non-corridor Regions for 4th Quarter 2007



The quarterly released ZIP code level data from Missouri DOR for Taxable Sales has been processed up to the second quarter of 2008 showing the local consumer sales trends and impacts (as seen in the figures below). For both regions, the taxable sales have declined from the first and second quarters of 2008 when compared to the first and second quarter of 2007, as seen in Table 2. However, the change in taxable sales is not consistent for both regions as the corridor region slightly improves from -6.6% to -4.4%, while the non-corridor sees a further decline in sales for the second quarter of 2008. The significant changes between the first and second quarters of 2007 and 2008 suggest that the national economic slowdown is likely influencing the region. Further analysis will focus on the national economic conditions and the magnitude of its influence on the region. Figures 3 and 4 show the total taxable sales by quarter for each region, which consistently demonstrates that the second and fourth quarters of each year are the strongest.

Table 2 Taxable Sales Growth by region and Quarter

	1st Quarter		2nd Quarter	
	2006 to 2007	2007 to 2008	2006 to 2007	2007 to 2008
Corridor	2.8%	-6.6%	-0.6%	-4.4%
Non-Corridor	1.8%	-1.3%	1.3%	-2.9%

Figure 2 Quarterly Taxable Sales for Corridor Region 2004 to 2008

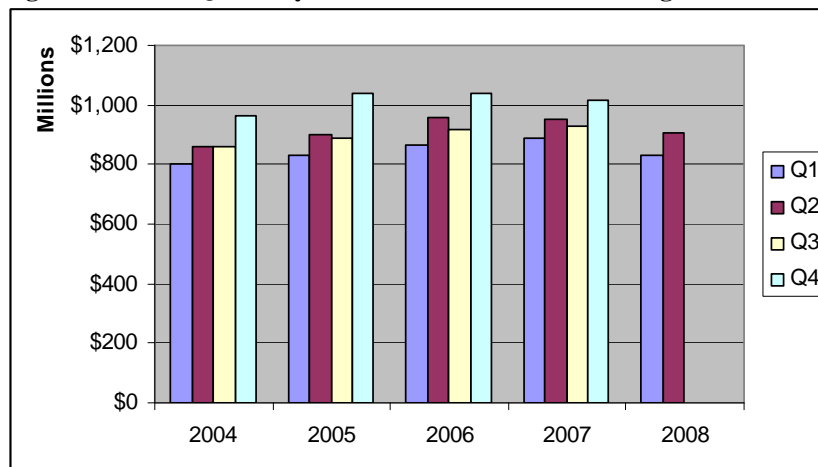


Figure 3 Quarterly Taxable Sales for Non-Corridor Region 2004 to 2008

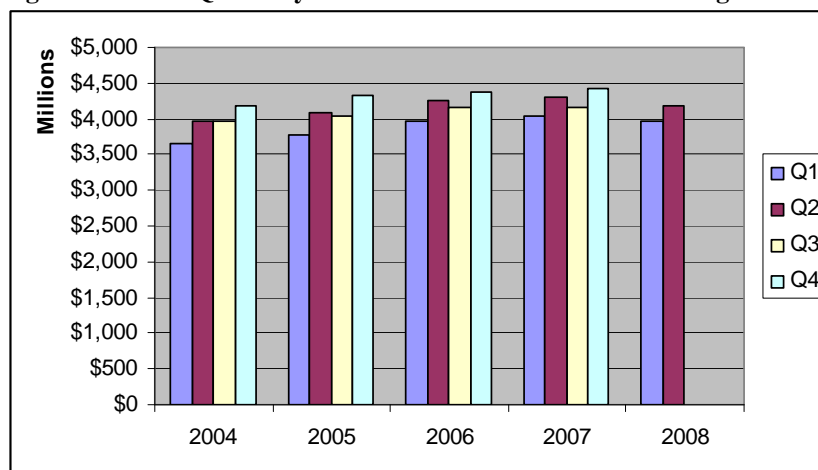


Table 3 shows the analysis of the taxable sales by major commodity group for the first quarters of 2006 through 2008. The taxable sales for wholesale trade are showing positive growth compared to previous years, despite the total taxable sales for the county declining. This could be explained by a shift in consumer spending away from general merchandise stores towards wholesale.

Table 3 Taxable Sales by Major Commodity for St. Louis County: First Quarter; In Dollars

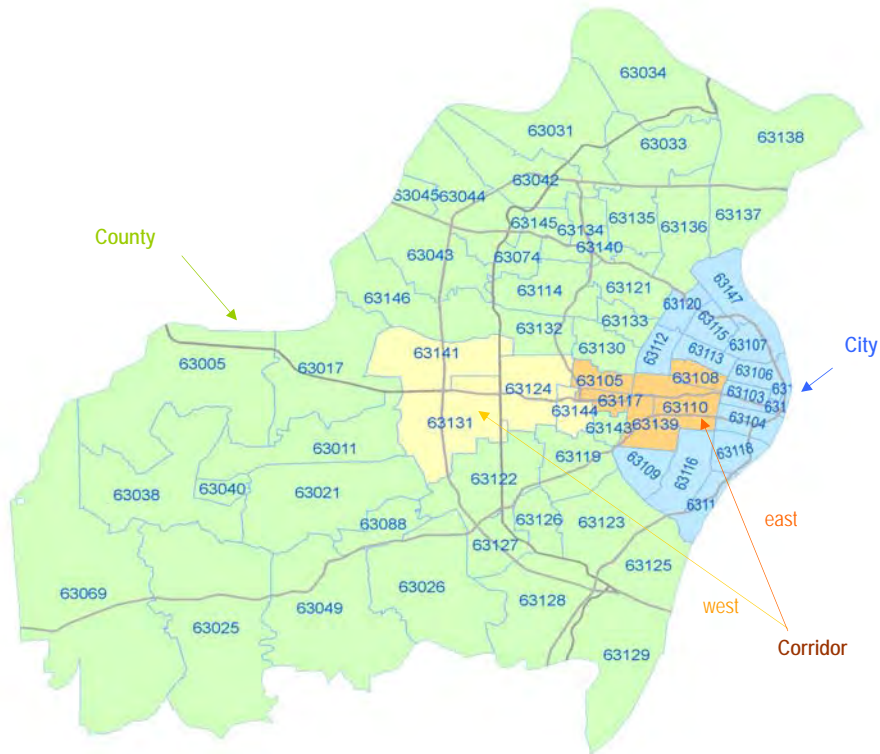
St. Louis County	2006 (1 st Q)	2007 (1 st Q)	2008 (1 st Q)
Wholesale trade – nondurable goods	115.05	119.52	128.47
General merchandizing stores	511.10	537.61	477.74
Food stores	407.08	412.96	426.21
Eating and drinking places	407.59	421.91	425.01
Personal services	24.53	23.98	24.13

Conclusions and Future Steps

It is anticipated that the first quarter of 2008 data from MERIC will be available before the end of September 2008, and will provide more information on the initial economic impacts from I-64's January

2008 closure. This published data is at the ZIP code level for both St. Louis County and St. Louis City. The data has been sorted by geography (corridor or non-corridor) to be consistent with the geographic units used in the Business Survey analysis. In addition, quarterly ZIP code level data from Missouri Department of Revenue for Taxable Sales is being processed to gauge local consumer sales trends and impacts. The data by ZIP code includes industry detail at the two-digit NAICS level for the number of establishments, total wages, and the number of jobs. The map below demonstrates the 9 ZIP code areas impacted by I-64 closures (corridor) and the ZIP codes that make up the remainder of St. Louis City and St. Louis County (non-corridor).

Zip Code Definitions for Study Regions



Moving forward, the second businesses survey is currently being drafted and will be sent to the business community working group for comments. The anticipated release of the second online business survey will be in the month of October.

5. I-64 Traffic Response

I-64 Traffic Response Highlights

Major Goals – I-64 Traffic Response Assessment

- Assess benefit/cost of the current I-64 Traffic Response deployment (arterials)
- Assess value of continuing future arterial highway service patrol efforts
- Develop white paper that provides a sustainable approach to consideration of future arterial

The main highlight for this quarter was the collection of the I-64 Traffic Response surveys. These surveys are provided during each assist performed. This survey is providing information from motorists receiving these services, including information on location, response/wait time, services provided, the professionalism with which services were provided, and the user opinion on the value of the services. Additional questions on the I-64

project were also included to help gauge users' opinions on the I-64 project and to connect these services with the I-64 project. The survey form identifies the sponsors, and provides information on the regional traveler information systems (511 and Gateway Guide). 596 surveys have been completed and received during the first five months for the I-64 Traffic Response with 2312 from Motorist Assist. This source of survey input represents 60% of total information received on the I-64 study. In the next quarter, the study team plans to conduct interviews with staff involved with this operation and start the evaluation of responses made by the I-64 Traffic Response team.

I-64 Traffic Response Objectives and Methods

This assessment will utilize information collected from transportation users, I-64 Traffic Response staff, previous research/study efforts, and the mobility assessment component to establish the benefit/cost of the program. This information will then be used to forecast the future value of continuing regional arterial highway service patrol efforts. The assessment will explore the following potential expanded arterial highway service patrol alternatives:

- Expanded services only during major or roadway closure construction activities
- Continuous services along major regional arterial corridors
- Limited-response services along major arterial corridors by expanding the region's Motorist Assist Program and the utilization of the region's integrated management and operation system

A draft white paper will be delivered by January 2, 2009 with the final white paper delivered by February 1, 2009 that will outline a sustainable approach regarding when regional arterial highway patrol services should be considered. This deliverable will provide the region the time necessary to evaluate, determine potential funding sources and implement desired recommendations.

I-64 Traffic Response Results

MoDOT performs service patrol activities where operators travel busy highways and provide assistance at incident sites for stranded motorists and crashes. By quickly helping to resolve problems, this program increases the safety and mobility of all motorists in the area. MoDOT's Motorist Assist program concentrates on the interstates, and I-64 Traffic Response sponsored by St. Louis County covers major arterial roads such as Manchester Road and Olive Boulevard. Starting on January 2, 2008 – the day of the closure – these programs' operators began distributing surveys to those they assisted to obtain feedback about operator performance, and as another method to learn how the closure is impacting motorists.

Responses indicate that motorists are very satisfied with operator performance, and their closure responses were similar to those obtained in the web and mail studies. The table below summarizes some of these satisfaction measures. While limited two questions, they reflect important questions on the I-64 closure on the project delivery method and regional mobility impacts. The distribution and receipt of surveys will continue throughout the study period, with quarterly updates being made.

Percent Respondents Expressing Satisfied or Very Satisfied
Motorist Assist and I-64 Traffic Response Surveys

	Decision to close for 2 years vs. 6-8			Ability to move around the St. Louis area		
	1 st Quarter	2 nd Quarter	3 rd Quarter	1 st Quarter	2 nd Quarter	3 rd Quarter
Motorist Assist survey respondents	89 %	94 %	93%	89 %	91%	88 %
I-64 Traffic Response survey respondents	89 %	95 %	93%	90 %	93%	93 %

Appendix A: Communications Data

- **Enhanced Web Survey**
- **Open-end Question Comments from Web Survey**
- **Public Official Interviews**

Appendix B: Mobility Data

Appendix C: Economic Data

Appendix D: Traffic Response Data

Welcome to the I-64 Survey

We appreciate your time and interest in sharing your opinion. This information is being collected, summarized, and reported to the Missouri Department of Transportation (MoDOT) to help them serve you better. We (Heartland Market Research LLC and HDR Inc) are independent contractors who have been hired to collect this information and provide it to MoDOT. Our only interest in this project is to provide accurate information about what you think, so please respond as accurately and completely as possible.

Most of the questions in this survey relate to the I-64 (Highway 40) project and how this impacts you. In 2008, I-64 will be closed in both directions between Ballas Road and I-170 for construction improvements and re-opened in 2009. In 2009, I-64 will be closed in both directions between I-170 and Kingshighway Boulevard.

We are interested in your opinion over time. We invite you to return and take our survey every month.

Have you taken this survey before?

- ☐ No
 - ☐ Yes
 - ☐ I'm not sure
-

Travel

In a typical week before the closure, how often did you travel on the closed section of I-64 (Highway 40)?

- ☐ Never
- ☐ Very rarely
- ☐ Once a week
- ☐ Two to three times a week
- ☐ Most weekdays
- ☐ Almost every day

In which of the following times do you *routinely commute* in the St. Louis area?
(Select all that apply)

- ☐ Morning: Before 7:00 AM
 - ☐ Morning: Between 7:00 AM and 9:00 AM (peak morning traffic)
 - ☐ Morning: Between 9:00 AM and noon
 - ☐ Afternoon: Between noon and 3:00 PM
 - ☐ Afternoon: Between 3:00 PM and 6:00 PM (peak afternoon traffic)
 - ☐ Evening: After 6:00 PM
-

Please indicate your agreement (or disagreement) with the following statements about how the closure of I-64 (Highway 40) between Ballas Road and I-170 has impacted you?

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
The closure has changed where I shop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I buy gas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed my attendance to events like a baseball game, Forrest Park attractions, and similar activities near the closed section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I eat out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed how often I travel to certain areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The closure has changed where I live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Has the closure of this section of I-64 changed your work habits?
(Mark all that apply)

- ☐ No - I still work the same hours in the same location as I did before the closure
- ☐ Yes - My hours have shifted
- ☐ Yes - I now work from another location (home, another office, etc.) more often
- ☐ Yes - I quit my job and accepted one somewhere else
- ☐ Yes - other

Personal Impact of Closure, Page II

Now that I-64 construction is underway, have you shifted your commute time to work and/or school?

- ☐ Yes - I now leave a little earlier (1 to 10 minutes earlier)
- ☐ Yes - I now leave earlier (more than 10 minutes earlier)
- ☐ Yes - I now leave a little later (1 to 10 minutes later)
- ☐ Yes - I now leave latter (more than 10 minutes later)
- ☐ No - I have not changed my commuting schedule to work and/or school
- ☐ No - This question is not applicable to me

If you want to provide more details about how the closure has affected you, please do so here.



Your Opinion, Page I

Please indicate your level of satisfaction with the following:

	Very Satisfied	Satisfied	No Opinion	Dissatisfied	Very Dissatisfied
How well the public has been kept informed about the New I-64 Project?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The timeliness of the information being made available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How alternative travel options have been communicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The traffic flow within construction work zones (other construction where you may travel)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How understandable and accurate are the construction work zone signs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How well are you managing to move around the St. Louis area with the closure of I-64?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years with lane closures?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your overall level of satisfaction with how the I-64 closure has been handled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you want to provide more details about any of the issues listed above, please do so here.

Your Opinion, Page II

The alternative to closing parts of I-64 (Highway 40) for two years was to have ongoing construction for 6 to 8 years. This would have resulted in having various lanes closed to traffic until at least 2014 and possibly through 2016. This alternative would have also cost at least a hundred million dollars more. Considering the alternative, how satisfied are you with the decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ No Opinion
- ☐ Dissatisfied
- ☐ Very Dissatisfied

In a typical week, how often do you commute in the following ways?

[illegible]

Alternative Routes

Improvements were made to designated alternative routes to help address potential traffic congestion. Please provide your opinion on how effective these improvements have been.

	Very Effective	Slightly Effective	No Difference	Slightly Ineffective (Worse)	Very Ineffective (Worse)	I Have Not Noticed	No Idea
--	----------------	--------------------	---------------	------------------------------	--------------------------	--------------------	---------

Temporary lane addition in shoulder area along I-44, I-70, I-270 and Page.



Permanent traffic signal timing and interconnection.



Traveler's information displayed on interstates and available on 511.



I-64 Traffic Response services on non-interstate roads to assist motorists and emergency response staff in early clearance of incidents.



If you would like to provide additional feedback on how effective (or ineffective) these improvements have been, please do so below:

Feedback

What is the best way for MoDOT to get information to you about road improvements and other road and bridge information?

(Mark all that apply)

- ☐ TV News
- ☐ Radio News
- ☐ Radio Talk Shows
- ☐ Newspapers
- ☐ Internet Sites [If selected, the respondent goes to next page; else the respondent goes to the Demographics page.]
- ☐ Receive information in mail (newsletter, etc.)
- ☐ Project email from MoDOT or I-64 Team
- ☐ Project display boards at public gatherings
- ☐ Road signs providing information on construction work
- ☐ Other

Please use this space to provide additional detail about how MoDOT could best provide you with information.

A large, empty rectangular text box with a thin black border. On the right side, there is a vertical scrollbar with a small upward-pointing arrow at the top and a downward-pointing arrow at the bottom, indicating that the box can be scrolled vertically.

Internet

On the previous page, you indicated that the internet was a good way to get information to you.
Please indicate which site(s) that you visit.

(Mark all that apply)

- ☐ GatewayGuide.com
- ☐ MoDOT's website (MoDOT.org and/or MoDOT.gov)
- ☐ The New I-64 site (TheNewI64.org) [If selected, the respondent goes to next page; else the respondent goes to the Demographics page.]

- ☐ Metro (MetroStLouis.org)
- ☐ DontGetStuck.org
- ☐ GetAroundSTL.com
- ☐ MidMetro4.com
- ☐ Post-Dispatch website (STLToday.com)
- ☐ Post 4 Traffic Online (post4trafficonline.com)
- ☐ Radio AM 550 website (KTRS.com)
- ☐ Radio AM 1120 website (KMOX.com)
- ☐ TV Channel 2 website (MyFOXSTL.com)
- ☐ TV Channel 4 website (KMOV.com)
- ☐ TV Channel 5 website (KSDK.com)
- ☐ Other

If you heard about the closure through one or more sites not listed above, please tell us which site(s).

The New I-64 Site (TheNewI64.org)

What information on the I-64 Project website do you find most useful?

- ☐ Commuter Alternatives (Transit/Carpooling Options)
- ☐ Construction Zone (Ongoing Closures)
- ☐ Map My Trip
- ☐ Newsroom
- ☐ Project Overview
- ☐ Traffic Impacts (Today's Closures)
- ☐ Web cams and/or Photo Gallery
- ☐ None of the Above

What additional information would you like to see on the I-64 Project website?

Demographics

These questions are asked because we need to make sure that we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

Are you male or female?

☐

Male

☐

Female

Please choose your age group

☐

Under 16

☐

16 to 25

☐

26 to 40

☐

41 to 65

☐

Over 65

What was your approximate *household* income in 2007?

☐

Less than \$20,000

☐

\$20,000 to \$40,000

☐

\$40,001 to \$60,000

☐

\$60,001 to \$90,000

☐

\$90,001 to \$120,000

☐

\$120,001 to \$150,000

☐

\$150,001 to \$200,000

☐

More than \$200,000

☐

I do not know

Demographics - Last Page

These questions are asked only to make sure we are not missing any groups of people from our survey. Feel free to skip any questions that make you uncomfortable.

We are interested in traffic flows. It would help us a lot if you could tell us two zip codes. If you are not sure, just leave them blank.

What is your home zip code? (where you are currently living)

What is your work zip code? (if you go to school, please enter your school zip code. If you do not otherwise work, please leave blank).

To what ethnic groups do you belong? (Mark all that apply)

- ☐ American Indian
- ☐ Asian
- ☐ Black or African-American
- ☐ Hispanic or Latino
- ☐ White or Caucasian
- ☐ Other

Submit Survey

If you heard about the closure through one or more sites not listed above, please tell us which site(s).

Quarter	Frequency	Percent	Valid Percent	Cumulative Percent
Q3 Valid	92	96.8	96.8	96.8
97.1 FM, 89.1 FM	1	1.1	1.1	97.9
I have been very frustrated with finding specific information online. (ie, when the McKnight bridge would be open. Fortunately the McCutcheon road signs kept me informed.	1	1.1	1.1	98.9
mapquest	1	1.1	1.1	100.0
Total	95	100.0	100.0	
Q4 Valid	14	100.0	100.0	100.0

What information on the I-64 Project website do you find most useful?

Quarter	Frequency	Percent	Valid Percent	Cumulative Percent
Q3 Valid	15	15.8	32.6	32.6
Construction Zone (Ongoing Closures)	2	2.1	4.3	37.0
Map My Trip	5	5.3	10.9	47.8
Project Overview	10	10.5	21.7	69.6
Traffic Impacts (Today's Closures)	12	12.6	26.1	95.7
Web cams and/or Photo Gallery	2	2.1	4.3	100.0
None of the Above	46	48.4	100.0	
Total	49	51.6		
Missing System	95	100.0		
Total				
Q4 Valid	1	7.1	20.0	20.0
Construction Zone (Ongoing Closures)	3	21.4	60.0	80.0
Traffic Impacts (Today's Closures)	1	7.1	20.0	100.0
None of the Above	5	35.7	100.0	
Total	9	64.3		
Missing System	14	100.0		
Total				

What additional information would you like to see on the I-64 Project website?

Quarter	Frequency	Percent	Valid Percent	Cumulative Percent
Q3 Valid	85	89.5	89.5	89.5
Again, more frequent photos, and maybe more web cams.	1	1.1	1.1	90.5
Also, web cams are great.	1	1.1	1.1	91.6
I would like to see the changes reflected in the four year plan and not just the road closures/openings. In other words, what will it look like in 2010.	1	1.1	1.1	92.6
I-64 and Kingshighway to Oakland	1	1.1	1.1	93.7
just a comment-think the photos updated usually weekly are great,they give a sense of progress presented visually,since we dont actually get to see most construction areas(except in the Brentwood area) and can't see the rate at which progress is being made-the photos convey some sense of how fast work is being done	1	1.1	1.1	94.7
More detailed project plans, timelines, schedules. When are you raising girders, doing grading, what sections are being paved, etc.	1	1.1	1.1	95.8
The Map My Trip function guided me 4 miles out of the way to get to my destination.	1	1.1	1.1	96.8
update the progress. Are you ahead of schedule, behind schedule? Are you starting some projects early? Some late? If you do finish the first half early, will you start the 2nd half early or wait?	1	1.1	1.1	97.9
updates on road openings as well as closures, and/or expected dates for temporary closed roads other than 40	1	1.1	1.1	98.9
where can I cross I-64? what roads currently cross, when will they be shut down and when will they be reopened.	1	1.1	1.1	100.0
Total	95	100.0	100.0	
Q4 Valid	14	100.0	100.0	100.0

Public Official Interview Update

Interviews with City's of Ladue, Frontenac, Richmond Heights, St. Louis County and US Representative Akin's Office completed. We are still scheduling meetings with the City of St. Louis and several state legislators.

Project Planning Period (Prior to Construction Award)

1. How well did MoDOT communicate with you and your constituents during the regional planning phase? What worked well and what could be enhanced?

- Reasonably well
- Too much time wasted during design process
- Too much info for stakeholders to be involved
- Insisted on being involved throughout process and were actively engaged
- Meetings with Residents were good
- Project was evolving as time went on
- Feedback from MoDOT on why certain decisions were made between meetings would have been desired
- Good Information Sharing – Individual, Elected Official Briefings, web sites, newspaper, radio, etc. – used all sources very well in sharing project planning

2. What were some of the issues or potential impacts identified during the planning stage? Were your constituents satisfied with the responses they received on these issues or impacts?

- Number of meetings
- Well involving City Officials early in process
- Maybe not sensitive enough at local level
- Municipal league meetings should have been completed in border Cities
- Intensive number of meetings. Try to shorten process.
- Maintenance of green space
- Lighting impacts, sound walls
- ER access during DB process
- Primary transportation network for region and must be engaged
- Couldn't afford to not fix it and let it fail
- Property takings
- How would adjacent impact issues would be resolved
- Traffic impacts during construction - gridlock
- Bellevue interchange
- MoDOT didn't know how some things would occur
- Design/Build accountability to ensure public got what they paid for
- Why re-build
- Right-of-way needs identification (who is impacted)
- Additional lanes needed
- Metro Link

- Quality of construction
- Soundwalls

3. In general, what could have been done to improve the regional planning phase?

- St Louis County circumvented as took over roadways
- Allow Cities to review the bid process to gain perspective of options
- MoDOT went out of way to listen to public
- More specific about design elements
 - i. Sound walls (how big, where at, size of footprint)
 - ii. Condemnation properties
 - iii. Early takings identified but then did not really occur (feedback was not given back to residents to say not needed)
- Completed own study to determine the potential impacts of various construction options
- Early is good
- Seriousness of closure and what would happen
- Presentation format –displays of project followed by an overall presentation
- Public meetings good
- Soundwalls presentation was excellent

Project Design and Construction Period (After Construction Award)

4. How well was the flow of project information to you and your constituents after the award of the project contract? What was the best method of sending and receiving information?

- Went well (too many meetings at 4 a month)
 - i. Email for public officials
 - ii. TV and paper for public
- Great and actively involved
- Multiple outlets was good for controversial issues
- Excellent flow of information both MoDOT and Gateway Constructor
- Full Court Media and Information Sharing – use everything to get to as many people as possible

5. How well has the general public been kept informed about the project since January 2 when I-64 was closed? What is the best method of sending and receiving information?

- Overall good
- Direct presence with MoDOT
- Separate meetings with citizens was good
- Public TV, radio, website
- Newspaper not good because it's a flat medium
- Very well at first – public and news sources lost interest later
- Full court media and information sharing – all methods available

6. What were the expectations for the I-64 project? Have these expectations been met based on you and your constituents' opinion?

- Increase in traffic complaints; side street turning movements
- Other than increase in traffic most are accepting
- Business down 9%
- DB going well – credibility back
- So far yes and expectations have been exceeded
- Interested before to determine affect on local arterials
 - i. Inter-governmental agreements to improve traffic conditions
 - ii. Had to do to improve overall expected traffic diversions
- Increase in traffic complaints; side street turning movements
- Good, but 3rd party contractor led to multiple people to discuss issues with. This at times was confusing. Some did better at resolving issues that others
- Not thrilled by service from Contractor
- Geometrics and grade of the roadway improvements
- Capacity improvements
- Improved I-170 and I-64 Interchange
- Water drains off of the lanes
- Soundwalls are ugly
- Access during closure
- What is the future access – same as before

7. The alternative to fully closing parts of I-64 (Highway 40) for two years was to have ongoing construction for 6 to 8 years. This later alternative would have resulted in having various lanes closed to traffic until at least 2014 and possibly through 2016. This alternative would have also cost many millions of dollars more. Considering the alternative, how satisfied are you and your constituents with the decision to complete the work by closing I-64 for 2 years instead of taking 6-8 years to finish otherwise?

- Satisfied (Very)
- Great
- Business impact shorter
- Saving dollars

8. What are your and your constituents' perspectives on the full construction closure approach? Have opinions changed over time?

- Doom and Gloom has changed to good
- Yes
- Impressed. Increased MoDOT's perception
- Understand huge benefits
- Project safety
- Delivery cost
- People are changing opinions

9. Have you and your constituents changed your perspectives about how this project is being delivered?

- No
- Yes
- Pleased with efficiency
- Design/Build is not being communicate
- Fear of traffic gridlock
- See project being completed faster
- MoDOT District 6 is trusted and respected

10. Have right-of-way acquisitions been done in a professional manner once right-of-way needs were identified? Were there any concerns regarding the acquisition of land?

- Received no calls regarding
- Location of actual sound walls and height. Once constructed created parcels that appeared closed in
- Driveway access – don't contact until know for sure need
- Property value changes
- Professionally completed...maybe to much
- Buy only what need and not too much to be sure
- One complaint at I-170 and Hanley Road area

11. Relocation of utilities is a major part of any construction project - have there been any concerns regarding the relocation of utilities?

- Yes at various locations
- Overall good
- Too many trees taken
- Great. No comments up front or No Issues
- Utility companies not MoDOT
- Affected areas three blocks or more away from actual project
- Communicating that utilities would be torn up
- Sometimes run-around given. MoDOT take over responsibility

12. What are the most mentioned construction impacts made by your constituents?

- Traffic, Traffic
- Signal timing was helped
- Trees
- Lindbergh Blvd
- Timing of roundabout and Speode construction for ER access
- McKnight Bridge, other closures
- Clayton Road/Lindbergh Blvd. businesses

- Noise – night-time construction (initial concerns, but no complaints received)

13. In general, how could the project's operations and communication have been improved?

- None really; communication and responsive good
- Handling of emergencies occurring during construction
- Volume of day-to-day information
- Cut-through traffic issues
- Utilities
- Business information
- Interchange closures
- Full court media and information sharing

14. What is your opinion on the design/build project delivery process?

- Not quite clear on DB process
- Time savings
- Specifics about certain elements. (i.e. size and location of walls) Decisions slower for residents
- Thrilled
- Gateway Builders very good
- Some of the grant money didn't go to business directly affected
- Good
- Politicians say will do something but doesn't due to DB process
- Uncertainty – Final plans are not seen until they about ready to build
- If an issue came up MoDOT did a good job of discussing and resolving it
- Design/Build is not for every project

The New I-64 Economic and Regional Mobility Study

Quarterly Report # 4

September – November 2008

HDR

Before the Closure

Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.

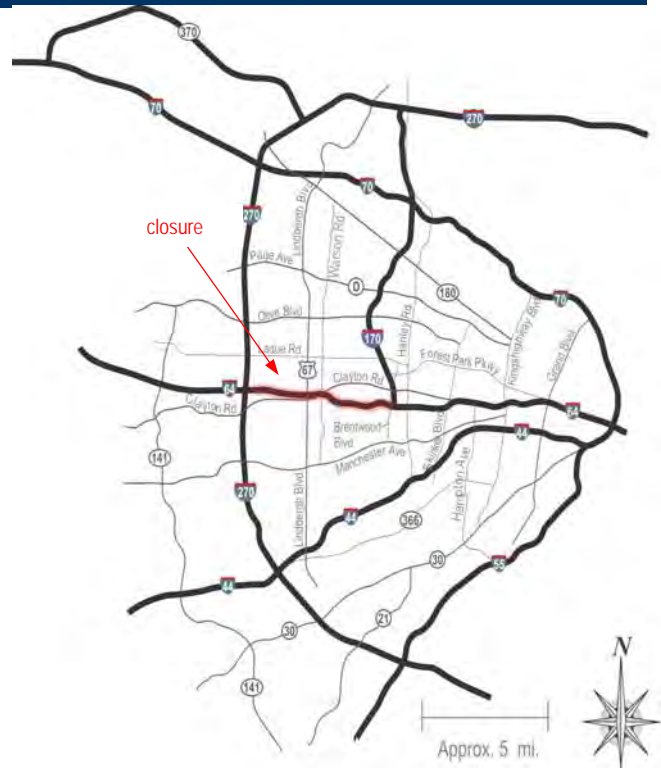
	Not affected at all (0 to 10)	Some extra time (11 to 20)	0 to 5 minutes extra time (21 to 30)	5 to 15 minutes extra time (31 to 45)	15 to 30 minutes extra time (46 to 60)	More than 30 minutes (61 to 90)
Commuting to and from work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Visits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping (grocery, medical, recreation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traveling (through the St. Louis Region)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1. Executive Summary

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (see map) was completely closed for construction. The closure is planned to last through the December 14, 2008, at which time a section to the east will be closed for construction for the bulk of 2009. Construction proceeded well in the west closure section even with early-year rainy weather conditions that delayed some construction activities.

This quarterly report assesses the period September through November 2008 that includes the 9th, 10th and 11th months of the western closure, evaluating the three key areas of **Project Communications** (MoDOT's provision of information to the public, and the public's response to the project), **Mobility** (the effects of the closure on travel behavior, choices, and traffic flow), and **Economics** (the effects of the closure on businesses within the corridor as well as the economic health of the region). With the western closure now eleven months old, findings are beginning to emerge that will be of interest to MoDOT, the St. Louis region and the general public. To date, the research team has found:



Communications (pp. 2-8)	Mobility (pp. 9-21)	Economics (pp. 22-26)
<p>6,140 participants have given feedback through web surveys, mail surveys, personal interviews, and surveys administered by Motorist Assist and I-64 Traffic Response crews.</p> <p>The public is fairly satisfied with the closure, how information has been communicated, and how they are managing to move around the region.</p> <p>The closure has had varying effects on the public's travel habits; with 75% indicating their travel frequency has changed for certain trips and earlier morning commute times.</p> <p>The public reported they are leaving 10 minutes plus earlier (40%) on their commute to work or home, although many trip times are relatively unchanged.</p> <p>Lane addition strategy along I-44, I-70 and I-270 received a 60% effectiveness rate; improved signal timing received 58%; and traveler information, DMS and 511 received 53%</p>	<p>The closure has re-routed approximately 140,000 to 150,000 vehicles per day; travelers have taken alternative routes, altered their travel schedules, and considered alternate modes.</p> <p>Freeway travel times are similar to the previous year and there is a noticeable peak spread and increased traffic volumes on some freeways with I-44 and I-170 seeing the greatest increase in traffic</p> <p>The RideFinders rideshare program experienced over a 41 percent jump in comparison to the last year and during the month of November, 9,753 participated in the program.</p> <p>Gas prices have probably contributed to the demand for these services. This impact will be monitored now that gas price is going down.</p> <p>Users at regional park-and-ride lots have decreased between August and November, 2008 by 283 vehicles.</p>	<p>Real estate – office vacancy rate has increase since 2007 and the region ranks 25th in vacancy rates compared other major metropolitan areas. Single-family housing has fallen consistent with national trends (41%). Multi-family housing has fallen significantly more than national trends (60% to 9%)</p> <p>Economics – both corridor and non-corridor employment in 2008 Quarter 2nd are close to 2007 Quarter 2nd. 1st Quarter compared to 2nd Quarter 2008 saw slight movements with jobs up, wages down, total taxable sales up and number establishments down. 3rd Quarter taxable sales was less than the 2nd Quarter, but more than 1st Quarter.</p> <p>Taxable Sales – are down for both corridor and non-corridor with corridor down slightly more - ranging from 1.6% to 4.2% for the first three quarters.</p> <p>The second business survey is currently available on-line for the business community's response.</p>

2. Communications

Communications Highlights

The citizens of the St. Louis region are providing input to this research through online surveys, mailed surveys, handouts by Motorist Assist operators, and personal interviews. Highlights gleaned from these various surveys include:

- **Awareness.** From the responses to date, it appears that MoDOT effectively communicated the upcoming closure to the affected population in 2007; pre-closure awareness was reported as very high.
- **Satisfaction.** Respondents are largely satisfied with their ability to travel around the region and with the level of information that has been communicated by MoDOT and others regarding the closure.
- **Information Sources.** TV News appears to be the best way to reach the majority of the respondents, with radio news, newspapers, and road signs also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a portion of the general population does not obtain their information via the internet and other methods should continue to be used to reach them.
- **Traffic Congestion Migration Strategies.** These strategies effectiveness level ranges from 36% to 60% with the ineffective level ranging from 7% to 19%. The lane widening strategy received the highest level of effectiveness while also receiving the highest level ineffectiveness. The other noticeable fact was that 25% reported “No Idea” that the Motorist Assist and I-64 Traffic Response programs were used.
- **Commuter’s Time of Travel.** The shift to earlier commute times is 45% and a shift to later commute times is 9%. No change of time was 27 % with 8% reporting not applicable. Survey indicated that 35% are not leaving earlier or staying later.
- **Travel Mode.** Initial responses on how the closure has changed people’s mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been, and continues to be, the automobile.
- **Personal Impact.** The closure is affecting people’s trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping, eating out and attending recreational activities. Overall, 75% of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Some residents have shifted their work hours, especially the respondents to the Web survey, who indicated a shift to earlier morning commutes. However, the web survey received a heavy early response when impact uncertainty to the closure was high. This issue will be explored in more detail as progress is made on the I-64 study.

To date, the responses have been fairly consistent over the various survey methods. This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population (other than issues related to online access, which is by definition skewed in the Web survey responses).

Communication Assessment Objectives and Methods

Major Goals – Communication Assessment

Develop and implement survey instruments
Determine effectiveness of pre-closure notification
Measure participant satisfaction for key issues
Estimate changes in behavior
Hear everyone's voice
(obtain generalized sample)

Total Collected Surveys by Method

Web	1293
Mail	700
In-person	180
Motorist Assist	
MoDOT	3212
I-64 Traffic Response	755
TOTAL	6140

Four classes of survey instruments were developed to assess the communication aspects of this project:

- A continuous online survey was developed and enhanced on June 1, 2008. Links to the survey were placed and have been maintained on both MoDOT's main website and the New I-64 Project site. MoDOT, through its project public outreach efforts, continues to encourage and promote public input via this survey method. Beginning on December 15th, the online survey will again be enhanced to reflect the opening of the I-64 west section and the closing of I-64 east section. This enhancement will seek information from the public on their opinions on the delivery of the new I-64 west section and the closing impacts of the I-64 east section.
- To help obtain a representative sample, a physical survey was developed and mailed to 10,000 respondents in twenty-eight zip codes near the I-64 project. This work was completed during the first quarter and summarized in the 1st quarterly report. This mailed survey was successful in helping achieve a better cross-sectional representation of the region's population. Plans are underway to again distribute a mailed survey in early 2009. We will again survey the same area. This survey instrument will also be done after the I-64 project is completed.
- In-person surveys were utilized to assess public opinions at two major shopping locations in the immediate area of the closure (the St. Louis Galleria near I-64/I-170, and Schnuck's grocery store at Lindbergh Boulevard and Clayton Road) in the 1st quarter of the closure. Public Official interviews are ongoing with both one-on-one interviews and future contacts through email survey questions. We have conducted interviews at the Zoo on September 20, 2008. Detailed information is provided in this quarterly report's Appendix A.
- Project satisfaction measures were also added to the Motorist Assist and I-64 Traffic Response service surveys that are distributed to people serviced by Motorist Assist and I-64 Traffic Response operators. During the four quarter period, 900 - Motorist Assist and 159 - I-64 Traffic Response were received. This source continues to provide a good flow of information.

In order to facilitate comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the "not sure" or "no opinion" percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Communications Results

Use of I-64, Knowledge of the Closure

The survey results indicate that the public was very aware of the closure well before it occurred. 98.4 percent of the online respondents were aware of the upcoming closure in 2007, and since 97.2 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information. The changes between the first quarter and second quarter report measurements were generally less than 1 percent. This information was reported in the second quarter. On June 1, 2008, the web survey was enhanced to gain additional information about the I-64 project. These enhancements were made to further explore potential impacts from the roadway closure. The knowledge of closure question, based on only a slight variation in the first two quarters and a high response of closure knowledge, was removed.

Satisfaction

The chart at the right summarizes survey respondents' opinions in the area of satisfaction in the 4th quarter and compares them to the combine 1st and 2nd quarters and 3rd quarter. As the chart indicates, the satisfaction level (in percentage of response) is still down for most response categories from the first two quarters based on information from the web survey. However, the 4th quarter is up from the 3rd quarter for most response categories.

The information received from Motorist Assist and I-64 Traffic Response surveys is higher than the online survey. This could be explained based on the

Satisfaction Level (Web Survey n=158)	4 th	3 rd	1 st & 2 nd
Public informed	79	73	91
Timely information	78	73	89
2 years vs. 6 to 8 years	74	71	76
Communication of alternatives	64	58	83
Overall satisfaction	70	69	78
Managing to move around area	60	60	72
Work zone traffic flow	55	46	69
Accurate/understandable signs	73	65	76
Satisfaction Level (MA Survey n=1059)			
2 years vs. 6 to 8 years	94	93	89
Managing to move around area	91	88	89
Satisfaction Level (Zoo Survey n=80)			
Public informed	94		
Timely information	89		
2 years vs. 6 to 8 years	86		
Communication of alternatives	88		
Overall satisfaction	90		
Managing to move around area	75		

sample sizes (158 online compared to 1059 MA) and/or how the survey was obtained. Those receiving a survey right after receiving valuable roadside services might be inclined to response differently than someone who must seek out the online survey to input information. Work zone traffic flow rebounded from 3rd quarter low – up 9%. The other areas still range in the area 60 to 70%. The research team will continue to monitor these public opinions to see if a trend is forming or if the small sample size has impacted the outcome or is there a variation in response by different survey instruments.

The in-person interviews, conducted late in the first quarter at two major shopping locations near the closed section of I-64, showed general agreement with other survey results. Conducting surveys at shopping locations provides a potential correlation link with the economic component of this study. Consistency in data across all survey efforts helps validate that true public opinion is being gained. The Zoo survey opinions were closer the first two quarters' information and the 1st quarter interviews opinions. The information gained from all survey instruments will be compared and analyzed in the future annual and final reports to assess the consistency across different survey instruments.

Personal Impact of the Closure

The table below shows the 3rd and 4th quarter responses regarding the closure impact on travel. The travel destination of “attending recreational activities” was added when the web survey was enhanced on June 1, 2008. This activity will be monitored as the I-64 project prepares for the East closure, since a number of regional recreational facilities are located along I-64 near this closure.

The comparison between the 3rd and 4th Quarters showed some differences in “where I eat out”, “where I buy gas” and “attending recreational activities”. The research team will continue to monitor the survey responses on these travel destinations.

Survey Question – “The closure has changed” – Percentage of Agreement

Travel destinations	4 th Quarter	3 rd Quarter
Travel to certain areas	75	75
Where I shop	52	51
Where I eat out	52	43
Where I buy gas	39	25
Where I work	10	12
Where I live	10	13
Attending recreational activities (i.e. games, parks, etc.)	42	34

Survey Question “When do you routinely commute in St. Louis” – Response and Percentage

Time of Day	4 th Quarter	3 rd Quarter	1 st and 2 nd Quarters
Before 7 am	45 (13%)	23 (12%)	277 (22%)
7 to 9 am	100(29%)	53 (27%)	334 (27%)
9 am to Noon*	21 (6%)	16 (8%)	103 (8%)
Noon to 3 pm	22(6%)	18 (9%)	
3 pm to 6 pm	108 (32%)	63 (32%)	376 ((31%)
After 6 pm	44 (13%)	23 (12%)	145 (12%)

*First two quarters asked 9 am to 3 pm

Throughout the first 11 months, most commutes were being reported as being made between 7 and 9 am and 3 and 6 pm. The before 7 am is down when comparing 1st / 2nd Quarter’s responses to 3rd and 4th Quarter’s responses.

Information Sources and Communication Methods

TV News still continues to be best method of distributing information with Radio News, Internet and road signs running a close second. TV News and Internet are more pre-trip information sources while Radio news and road signs are more en-route information sources. It is noticeable that MoDOT’s three web sites are listed as 1st, 2nd, and 7th as sources of information.

Best Way to Distribute Information

Source	Responses
Internet	113
TV News	112
Road Signs	102
Radio News	86
Email from I-64/MoDOT	62
Newspaper	61
Mail from MoDOT	32
Radio Talk Shows	29
Project Display Boards	22
Others	10

Internet Sources

Source	Responses
New I-64 Web Site	90
MoDOT's Web Site	66
Post-Dispatch (STLToday.com)	52
TV 5 (KSDK.com)	52
TV 2 (MyFOXSTL.com)	32
TV 4 (KMOV.com)	23
Gateway Guide	19
Metro (MetroStLouis.org)	14
Radio 1120 AM	14
Radio 550 AM	11
Post 4 Traffic Online	10
Other	7
GetAroundSTL.com	5
DontGetStuck.org	3
MidMetro4.com	2

Traffic Congestion Strategies

Various traffic congestion strategies were implemented to reduce regional traffic congestion potentially caused by the displacement of 140,000 to 170,000 vehicles per day during the roadway closure. Public information is being sought on four of these strategies to evaluate to their impact in reducing the traffic congestion. The enhancement made on June 1, 2008 to the web survey will assist in this evaluation. The effectiveness level ranges in the 4th Quarter from 36% to 60% with the ineffective level ranging from 7% to 19%. The lane widening strategy continues received the highest level of effectiveness while also receiving the highest level ineffectiveness. The other noticeable fact was that 25% reported “No Idea” that the Motorist Assist and I-64 Traffic Response programs were used.

Effectiveness/Strategies	Lane widening along I-44, I-70 and I-270	Improve Signal Timing and Interconnection	Traveler Information on DMS and 511	Motorist Assist and I-64 Traffic Response Programs
	3 rd to 4 th Quarter	3 rd to 4 th Quarter	3 rd to 4 th Quarter	3 rd to 4 th Quarter
Very Effective	30 – 29	37 – 32	28 – 20	29 – 15
Slightly effective	33 – 31	20 – 26	32 – 33	16 – 21
No difference	12 – 6	9 – 11	22 – 14	15 – 16
Slightly ineffective	7 – 11	11 – 4	3 – 4	4 – 5
Very ineffective	10 – 8	5 – 10	4 – 9	3 – 2
Have not noticed	2 – 5	10 – 8	3 – 5	11 – 17
No idea	6 – 9	8 – 10	8 – 14	22 – 25

Commuters' Time of Travel

The shift in commute time question was added on June 1, 2008 to web survey. This question was added to gain additional in-sight and understanding of the public's opinion on the I-64 project. A time shift in beginning their commute to work or home does shift demand placed on the transportation system during peak period of travel. The following compares responses received in the 3rd and 4th Quarters to help in the evaluation of the commuter's time of travel:

Shift in Commute Time	3 rd Quarter	4 th Quarter
Little earlier < 10 minutes	13%	15%
Earlier > 10 minutes	26%	40%
Little Later < 10 minutes	2%	3%
Later > 10 minutes	11%	6%
No Change Time	30%	27%
Not applicable	18%	9%

The shift to earlier commute times is 55% (up from the 3rd Quarter) and a shift to later commute times is 9% (down slightly from the 3rd Quarter). No change of time was down from 30% to 27%. About 2/3 of the web survey participants in the 4th Quarter reported leaving earlier or later for their commuter

Travel Modes

The 4th quarter web surveys shows a trend developing in telecommuting for few times per week. Most the other 4th quarter travel mode responses moved back towards the first two quarters. Also, the increased carpooling shown in the table below appears to correlate to the increasing reported by RideFinders later in this report.

Travel Mode (Comparison of Travel Modes - Web Respondents Only)

Mode/Frequency	Never			Few Times a Week			Almost Every Day		
	Q4	Q3	Q1&2	Q4	Q3	Q1&2	Q4	Q3	Q1&2
Riding the Bus	95%	89%	94%	5%	10%	4%	1%	1%	2%
Biking	91%	87%	94%	9%	9%	5%	1%	4%	0%
Riding MetroLink	83%	78%	82%	14%	19%	15%	3%	3%	3%
Telecommuting	72%	75%	80%	24%	20%	17%	4%	5%	3%
Walking	86%	77%	88%	11%	16%	10%	3%	7%	2%
Driving with Others	47%	27%	51%	41%	49%	35%	12%	24%	14%
Driving Alone	3%	5%	6%	15%	18%	9%	81%	76%	85%

Demographics

The table below summarizes the responses to demographic questions from the 4th Quarter web survey only. Information from all survey instruments are being evaluated to ensure a valid cross-sectional representation of the region is obtained.

Demographics of Survey Respondents

Age		Web	Gender		Web
under 25		6 %	Male		53 %
26 to 40		35 %	Female		47 %
41 to 65		56 %			
Over 65		3 %			
			Income		Web
			Less than \$20,000		1 %
			\$20,000 to \$40,000		8 %
			\$40,001 to \$60,000		19 %
			\$60,001 to \$90,000		20 %
			\$90,001 to \$120,000		24 %
			\$120,001 to \$150,000		13 %
			\$150,001 to \$200,000		7 %
			More than \$200,000		7 %
Race		Web			
American Indian		1 %			
Asian		2 %			
Black/African-American		3 %			
Hispanic/Latino		1 %			
White/Caucasian		91 %			
Other		1 %			

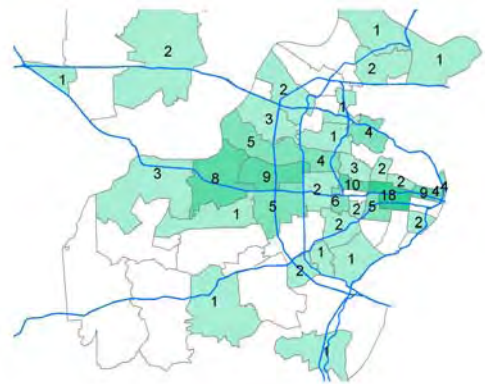
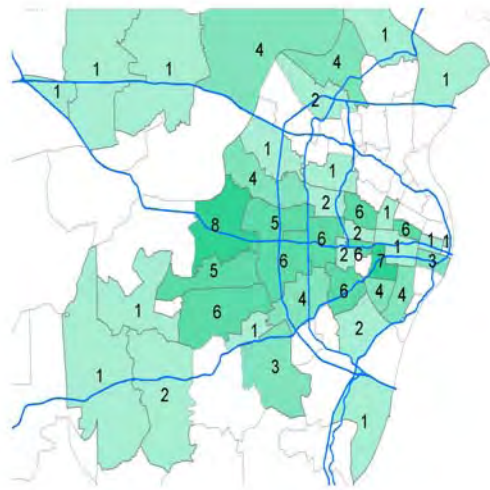
The map on this page illustrate the zip codes of survey respondents within Missouri (a small portion of the responses – around 2 to 3 percent – were from outside the state). These results are preliminary; future reports will likely aggregate zip codes into larger geographic units with more statistical robustness.

Survey Respondents' Residence, 4th Quarter - Commute Destination (by zip code)

Residence Location

Commute Destination

Web
Only



3. Mobility

Mobility Highlights

The study team continued the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. Key findings to date are listed below:

- Approximately 140,000 to 150,000 daily vehicles used the segment of I-64 between Ballas Road and I-170 before its closure. The assessment of where those vehicles have gone is still underway; based on the data in this report, the only large traffic increase seen with available data was on I-44 and I-170. Volume data is still being evaluated for I-70, I-270, and the many parallel facilities that have been impacted by the closure. As more data will be available, we will be able to a more detail assessment of traffic volumes in the annual report.
- Analysis of Traffic.com travel-time data has indicated some minor variation in peak-hour travel times on key freeways in the region. However, a more detailed assessment will be made and reported in annual report.
- The RideFinders Rideshare program continued to experience increasing growth rates, with a 40+ percent jump in monthly rides in the year between November 2007 and November 2008. I-64 closure is a partial reason for this increase; however, the significant gas price increase has also contributed to people choosing to carpool or vanpool. The recent gas price decline will hopefully help in the determination of the causes for the significant increase in ridership.

Mobility Assessment Objectives and Methods

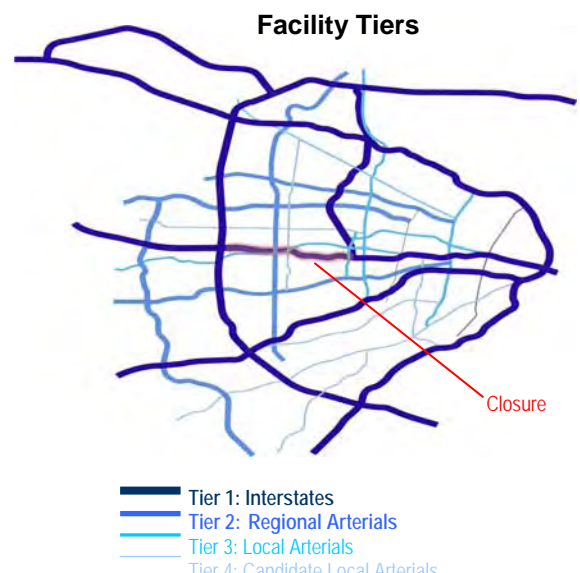
This assessment uses a variety of tools to measure the region's mobility before, during, and after the closure period. The assessment examines traveler shifts and their effects, using a

Major Goals – Mobility Assessment

- Assess the shifts (temporal, spatial, and modal) in travel demand throughout the region
- Assess congestion effects of the closure
- Assess closure effects on transit, ride-sharing, and park-and-ride demand.

multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels, and future reports will continue to hone and refine the assessment.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Tier 4 facilities are being assessed to see whether they should be included in the Tier 3 grouping, or excluded from further analysis. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) are being gathered throughout the duration of the closure to measure its regional impacts.



Mobility data is being obtained through numerous sources:

- MoDOT is providing historical traffic counts through its count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times since the I-64 closure. MoDOT also maintains statistics for its park-and-ride facilities across the state, and is providing monthly count data for its facilities in the region.
- Traffic.com is a commercial web-based site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. Traffic.com archives traffic volume, travel speed, and incident data and has an agreement to share this information with MoDOT. The research team developed customized software routines to download, organize, prune, and analyze this data. **Enhancement to this application are underway that will help better manage the large data files needed to aggregate data to a 5-minute interval.** They also provide travel times on limited arterials in the study's impacted area that are being collected.
- St. Louis County has conducted traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and is providing statistics aggregated on a monthly basis. In addition, Metro collects parking data at its stations with park-and-ride facilities. The research team continues to work with them on gaining access to this information. This assessment will be further addressed in the annual report.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data is provided on a monthly basis.
- The research team is supplementing data collection where necessary, including travel-time runs, traffic counts, and field observations. This quarter field assessments were made on the arterial data being collected electronically daily to check the data validate.

Mobility Results

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by The New I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right. As the list indicates, one change has been reversed after monitoring field traffic flow operations.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. The research team has recently received a complete list of these improvements, and they will be incorporated into the future annual reports.

Key Improvements to Regional Highways/Roadways

- I-70** Re-stripe from I-170 to I-270 (add lane in each direction)
- I-44** Re-stripe from I-270 to I-55/I-70 (add lane in each direction)
- I-270/I-64** Re-stripe I-270 North of I-64 to Route 340 (add lane in each direction) and re-stripe I-64 Eastbound ramp to I-270 Northbound
- I-270/I-44** Re-stripe interchange's ramps to improve traffic flow
- Clayton Road** Re-stripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road
- Ladue Road** Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road
- Improved Signal Timing** along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park

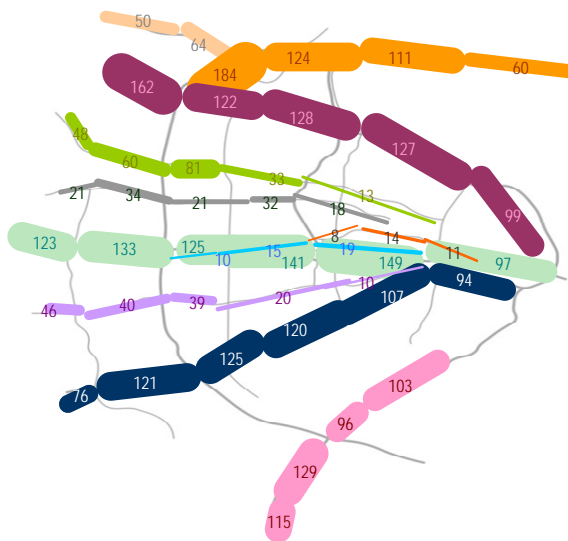
Traffic Volumes

Freeways

Prior to the closure, in baseline 2006, I-64 carried approximately 140,000 to 150,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding “outlier” days). 100 percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

Several sources are being used to evaluate the closure’s effects on traffic volumes - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The map at right, extracted from Traffic.com and MoDOT data, shows east-west daily traffic volumes for many of the key study facilities for the baseline year of 2006. Similar data has been extracted for the key north-south facilities (I-270, I-170, Lindbergh Boulevard, etc.) It is important to note that this information averages every non-holiday, non-“outlier” weekday from 2006, and therefore is not a good base against which to compare the effects of the closure for smaller periods (such as the current quarter under evaluation). However, it is useful for illustrating order-of-magnitude baseline conditions.

**Baseline Daily Weekday Traffic (000's)
East-West Corridors (2006, full year)**

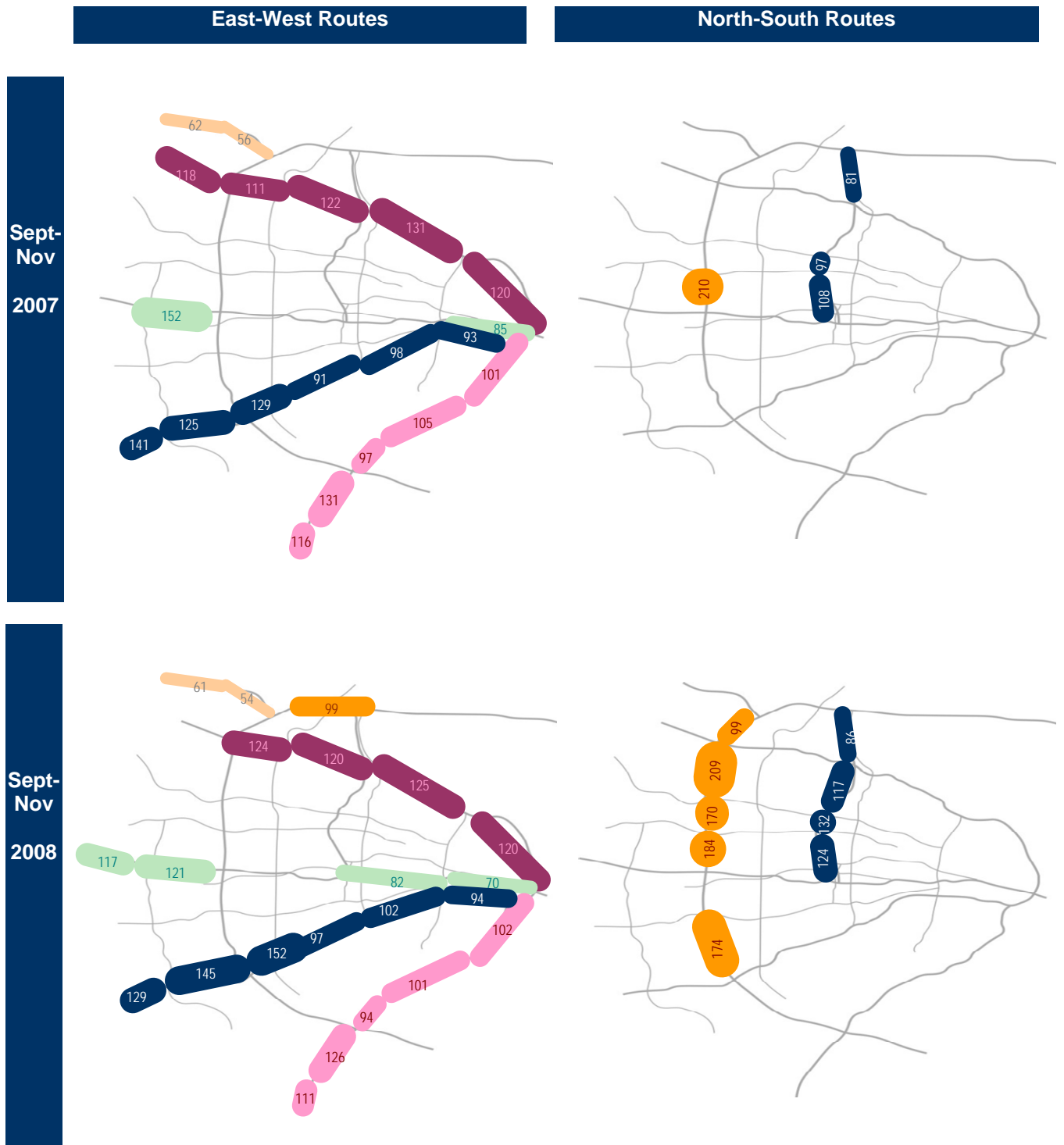


The maps on the next page show a more fair initial comparison for selected segments. They compare weekday September-November 2008 volumes with the September-November 2007 volumes. (Weekend volumes are also being assessed.)

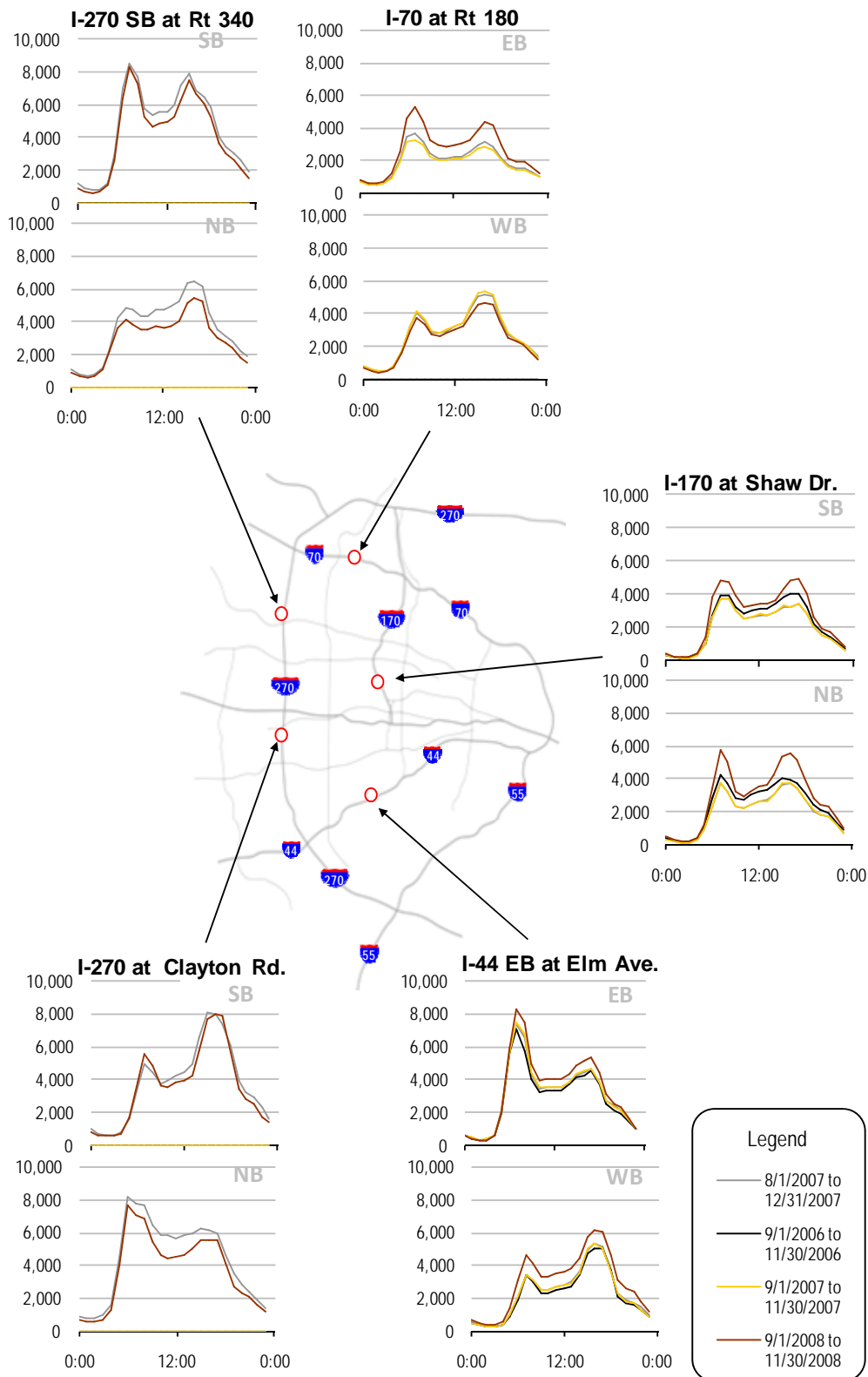
Based on these maps, the following preliminary conclusions can be gleaned:

- Daily traffic volumes on I-64 immediately east of the closure have decreased significantly since 2007 by 50,000 vpd.
- Daily volumes on I-55 appear to be roughly equivalent to those before the closure.
- Daily Volumes for I-44 just increased by 23,000 vpd just east of I-270.
- Daily Volumes for I-70 just increased by 13,000 vpd just east of I-270
- Volumes on I-170 between I-64 and I-270 have increased by approximately 16,000 – 35,000 vpd compared to the previous year.

Daily Traffic Volume Comparison (000's) on Selected Segments, 2008 vs. 2007 (PRELIMINARY)

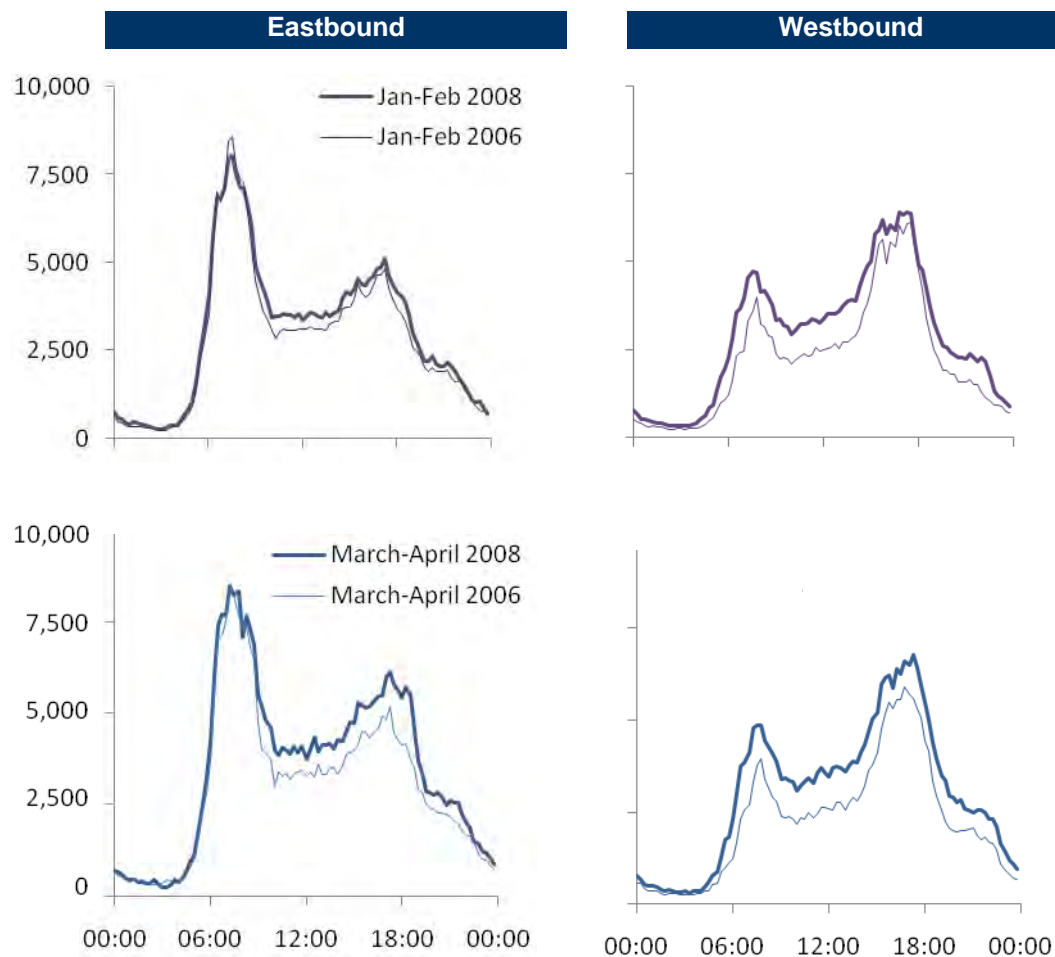


Below is the volume profile from select locations around the city. For reference, AM peak is top graph and PM peak is lower graph.



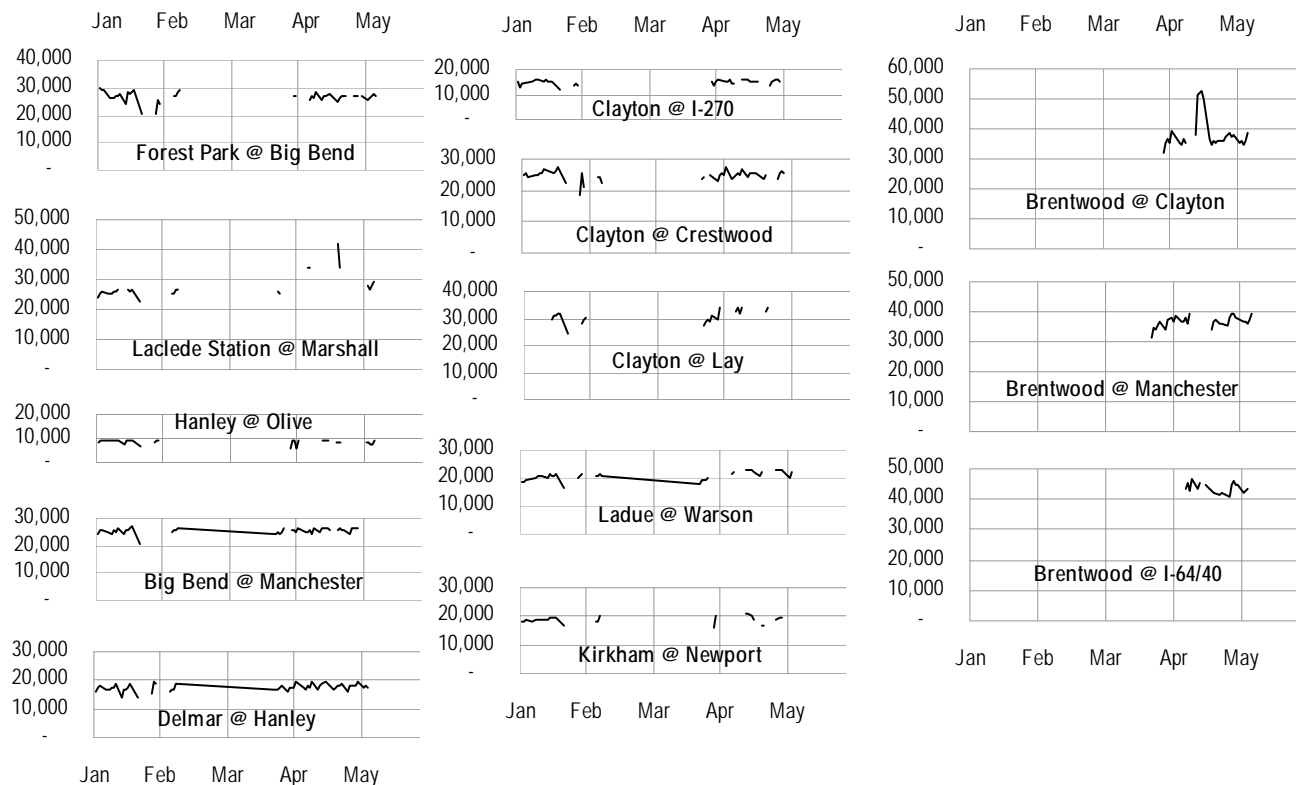
The Traffic.com data is also being examined at more refined resolutions, from hourly totals all the way down to five-minute volumes. The graphs below illustrate how the effect of the closure on the **duration of the peak period** is being examined. As the graphs indicate, overall volumes on this segment have generally increased, but the peak periods have spread as well. Five-minute data assessment requires significant data storage. We are currently developing SQL database server application that will provide better data management that will allow the team to aggregate data at a five-minute periods. This application will have a web-based access with pre-established queries developed. This application will be provide to MoDOT and East West Gateway for future usage. Further analysis of this spread will be undertaken in the annual reports at various sites.

Example 15-Minute Traffic Volume Profiles I-44 at Elm Avenue



St. Louis County has been tracking arterial volumes since the I-64 closure. The graphs below illustrate ADT data available from the County and are under study to extract trend information. For many days on which data are not plotted, volumes are only available for one direction. No significant conclusions can yet be drawn from these data, but they will continue to be a resource as the study progresses. **This information was presented in the 2nd Quarterly report and will be updated in the annual report when the initial detailed evaluation and assessment will be made.**

Average Daily Traffic Volumes Recorded by St. Louis County, 2008



MoDOT also collects volume data from many of the arterials in the region using its ACTRA signal system and field detectors. The graphs on the following pages examine volume trends on many of the key arterials during both peak hours on a monthly basis since the closure, including a comparison to a pre-closure baseline. These table and graph presents a sample summary of data collected in the 2nd Quarter. **We continue to capture this information and will present it in more detail in the annual report when a further detailed assessment is made.** Several limitations of the data should be noted:

- The pre-closure data is from a single day, in most cases collected in November or December 2007.
- During the closure, not all days had available or usable data.
- This data reflects only through volumes approaching intersections; hence, right- and left-turning traffic is not included.

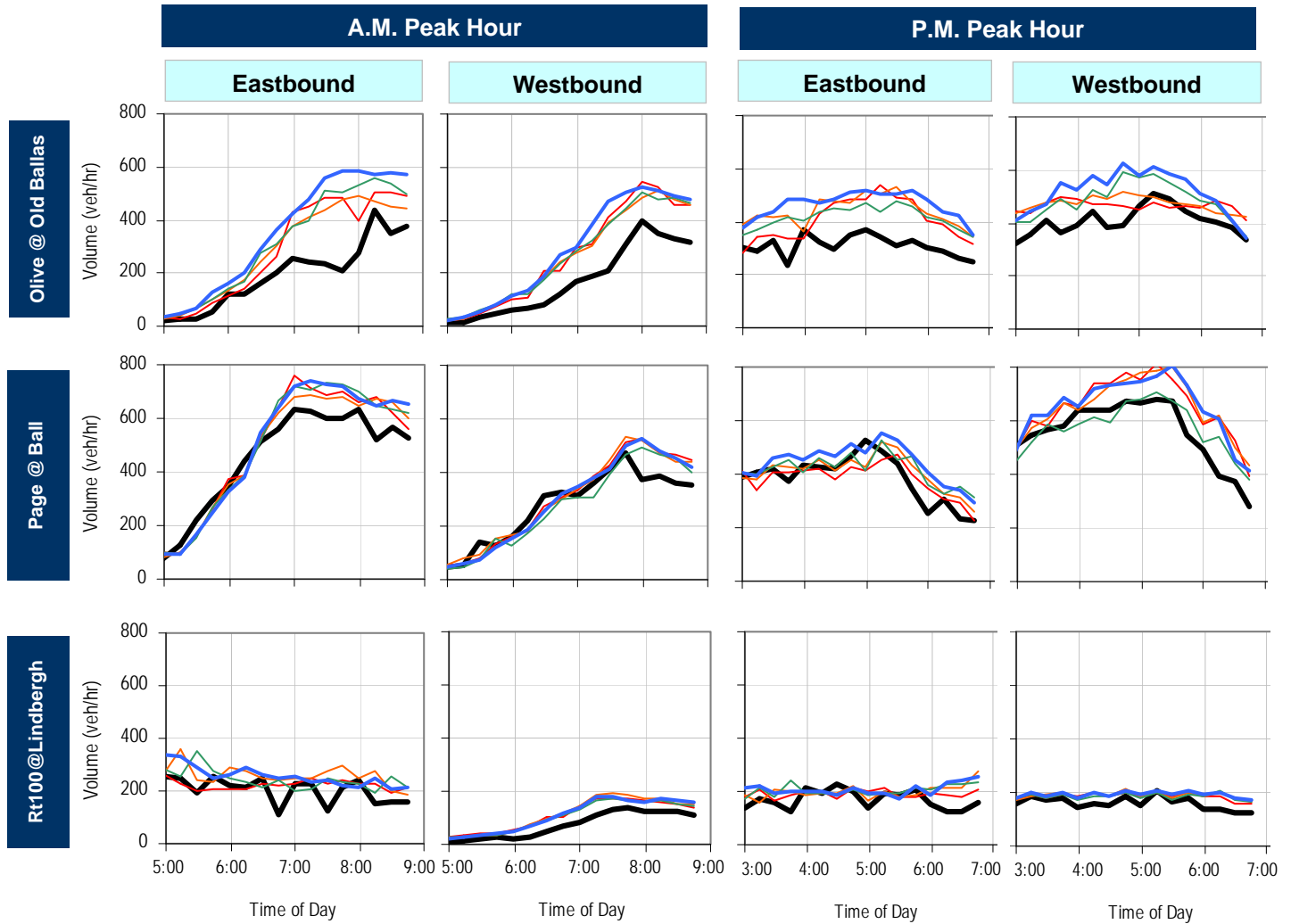
In spite of these limitations, the data reveals some anticipated patterns, such as volume increases on Page and Olive, which run parallel to the closure. Archiving and studying these data beyond the closure will help in understanding the closure's effects.

Summary of 2nd Quarter ACTRA Volume Reporting Since Closure, Key Arterials

	A.M. Peak Period	P.M. Peak Period
Olive	Eastbound and Westbound: 50% to 80% increase at Old Ballas	Eastbound: 30% to 50% increase Westbound: 14% to 27% increase. (p.m. volumes higher than a.m.)
Page	Eastbound: 7% to 11% increase. Westbound: up to 10% increase (a.m. volumes higher than p.m.)	Eastbound: 15% increase (after initial slight dip of -0.6%) Westbound: 3% to 17% increase
Manchester at Braeshire	Eastbound and Westbound: 4% to 17% increase	Eastbound: 6% reduction (after initial January dip of 20%) Westbound: 9% increase (after initial dip of 7%)
Manchester at Lindbergh	Eastbound: 10 to 27% increase Westbound: 44% to 53% increase	Eastbound and Westbound: 12% to 22% increase
Rte. 141 at Howard George	Southbound: 4% to 20% increase Northbound: dip below pre-closure (after January increase)	Southbound: 5 to 10% decrease Northbound: 4 to 7% increase (except February dip of 7%)
Lindbergh at Conway	Northbound and Southbound: 20% to 40 % decrease	Northbound and Southbound: 20% to 40 % decrease
Lindbergh at Manchester	Southbound: 200% average increase Northbound: 40 to 65% reduction	Northbound and Southbound: 40 to 65% reduction

East – West Routes

— Baseline
 — Jan '08
 — Feb '08
 — Mar '08
 — Apr '08



Travel Times

The research team is using Traffic.com's archived speed data to calculate travel times on freeway segments throughout the region. The table at right contains some of the data extracted. P.M. peak-period data are averaged over the current quarter, and compared with the last five months of 2007. The travel times in general do not show major variations from the pre-closure data, and also generally indicated faster travel times. The causes of these results will continue to be investigated, and could be attributable to a combination of peak-spreading, re-routing due to the closure, increased fuel costs, and other factors.

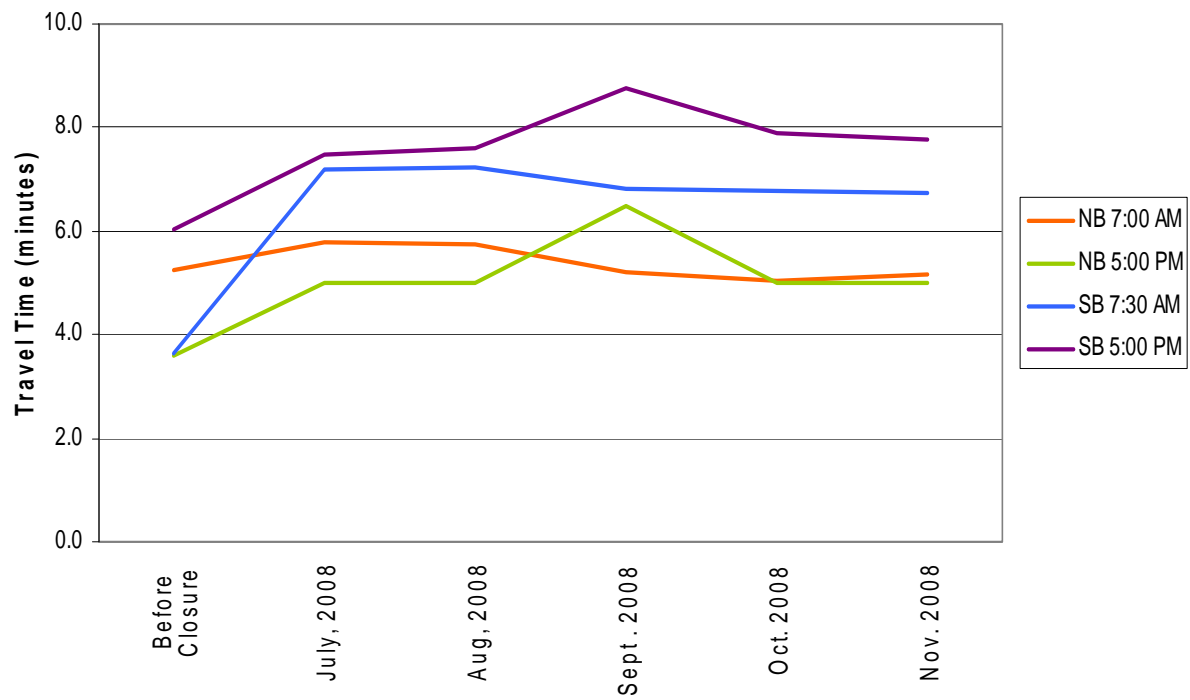
Travel Times (min.) Selected Freeway Sections - Preliminary		Peak Period (4 – 6 PM)		
Freeway Segment Description		Distance in miles	8/1/2007 12/31/2007	9/1/2008 11/30/2008
I-70 EB from I-270 (Exit 232) to I-170 (Exit 238)		5.8	5.6	5.5
I-70 WB from I-270 (Exit 232) to I-170 (Exit 238)		6.1	6.3	5.7
I-170 NB from I-70 (Exit 7) to I-64/US 40 (Exit 0)		7.6	7.9	7.2
I-170 SB from I-70 (Exit 7) to I-64/US 40 (Exit 0)		7.7	7.9	7.7
I-270 NB from I-70 (Exit 20) to I-64 (Exit 12)		7.7	9.2	8.3
I-270 SB from I-70 (Exit 20) to I-64 (Exit 12)		8.8	9.8	8.8
I-270 NB from I-64 (Exit 12) to I-44 (Exit 5)		6.5	7.3	6.7
I-270 SB from I-64 (Exit 12) to I-44 (Exit 5)		6.6	12.7	9.8
I-44 EB from I-270 (Exit 276) to Kingshighway (Exit 287)		10.5	13.6	12.9
I-44 WB from I-270 (Exit 276) to Kingshighway (Exit 287)		10.5	12.0	12.2
I-64 EB from Rte 141 (Exit 22) to I-270 (Exit 25)		3.3	3.5	3.5
I-64 WB from Rte 141 (Exit 22) to I-270 (Exit 25)		3.3	2.9	3.0

Arterials

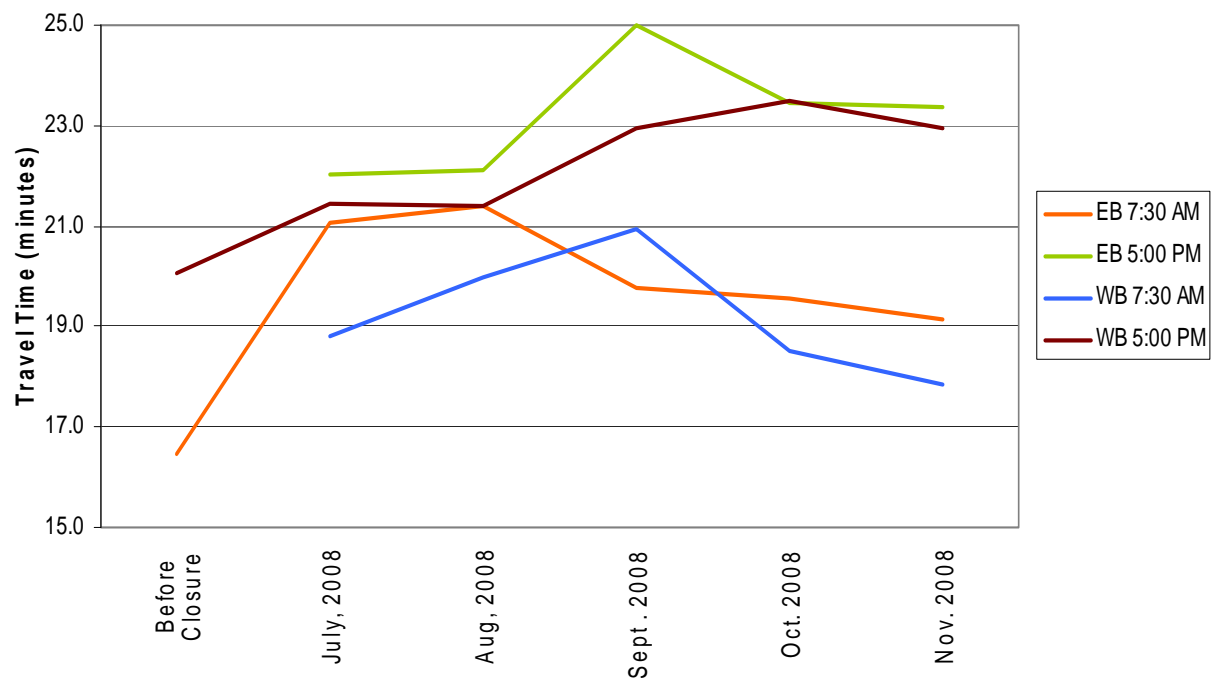
Information for four of the major arterial routes (available since July '08) is being supplied via Traffic.com and has been monitored by the research team as general indicators for arterial traffic flow near the closure area. These charts and graphs below include the times selected for comparing the before and after closure travel times. The research team has verified these travel times in the field. Once more data has been collected; a more robust analysis will be completed.

Route	Segment	Direction	Peak Period	Travel Time (Min)					
				Before Closure	July, 2008	Aug, 2008	Sept 2008	Oct. 2008	Nov. 2008
US 61/67	100 to I-64	NB	7:00 AM	5.3	5.8	5.8	5.2	5.1	5.2
			5:00 PM	3.6	5.0	5.0	6.5	5.0	5.0
		SB	7:30 AM	3.7	7.2	7.2	6.8	6.8	6.8
			5:00 PM	6.1	7.5	7.6	8.8	7.9	7.8
100	Barrett to Hanley	EB	7:30 AM	16.5	21.1	21.4	19.8	19.6	19.2
			5:00 PM	--	22.0	22.1	25.0	23.4	23.4
		WB	7:30 AM	--	18.8	20.0	21.0	18.5	17.9
			5:00 PM	20.1	21.4	21.4	23.0	23.5	23.0
MO141	I-44 to I-64	NB	7:00 AM	11.7	12.6	14.2	15.0	12.7	13.0
			5:00 PM	--	12.8	12.9	13.0	12.9	13.5
		SB	7:00 AM	--	11.1	11.5	12.7	11.6	10.3
			5:00 PM	14.0	11.7	12.4	14.8	13.2	13.1
D (Page)	I-270 to I-170	EB	7:30 AM	9.8	9.1	10.1	7.6	8.2	8.1
			5:00 PM	--	8.7	10.1	9.3	8.9	9.3
		WB	7:30 AM	--	11.3	11.7	8.6	7.6	7.9
			5:00 PM	10.6	11.2	11.6	8.5	8.7	8.4

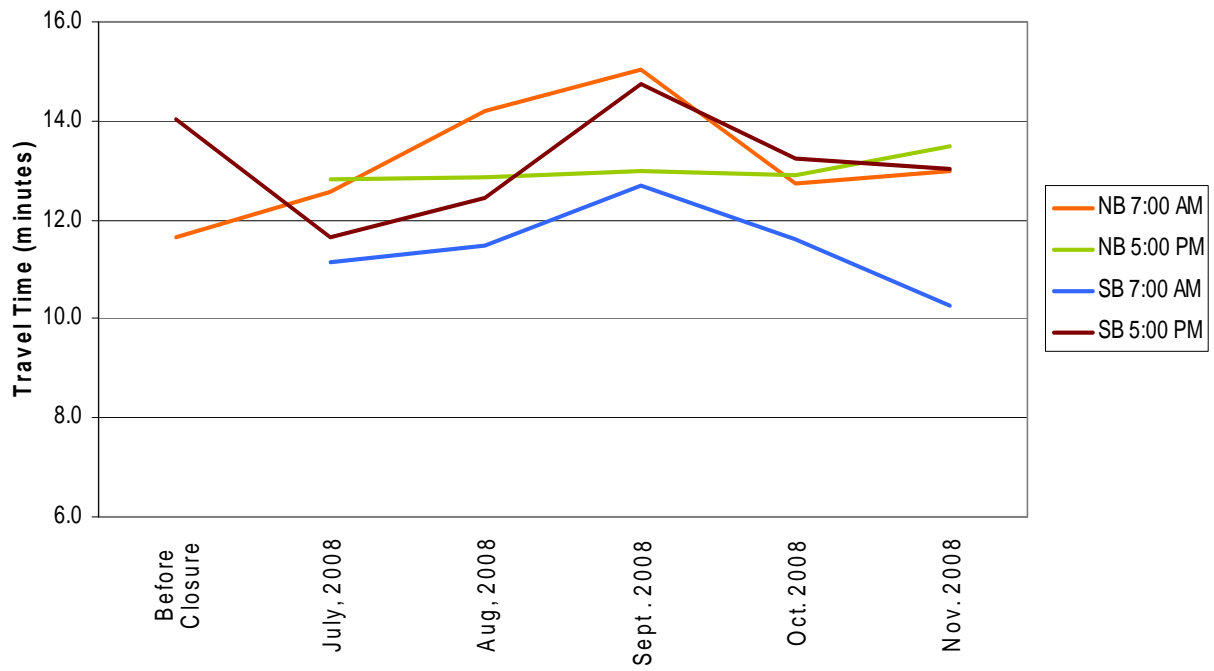
Routes US61/67 - Route 100 to I-64



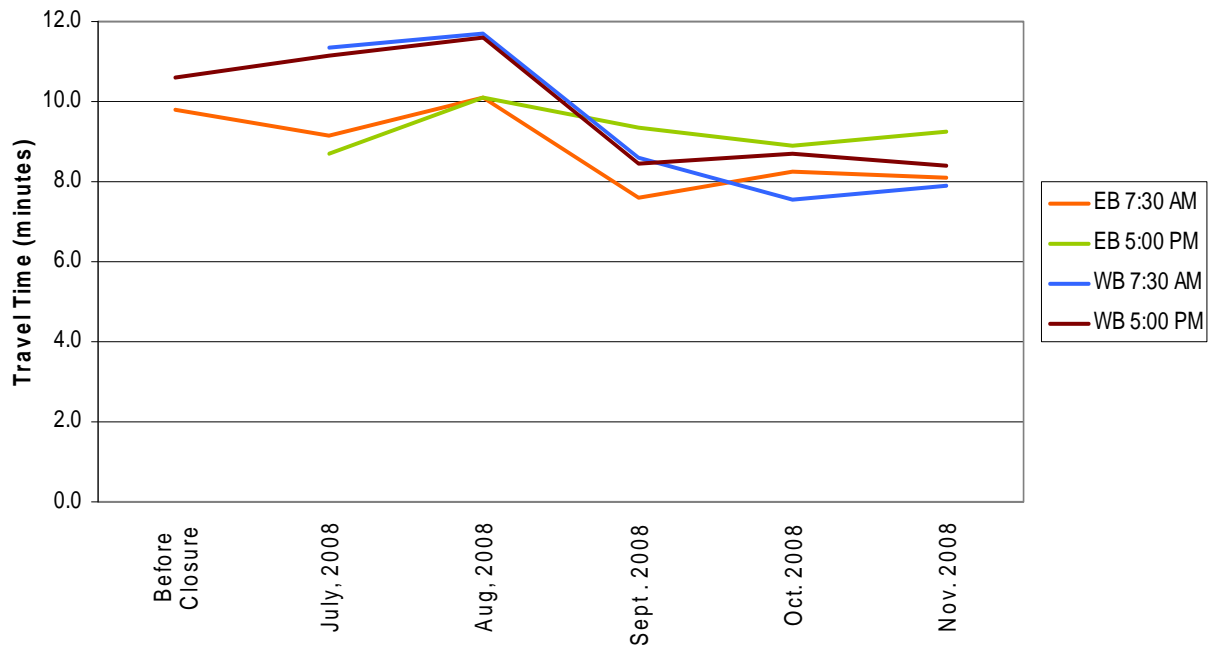
Route 100 - Barrett to Hanley



Route 141 - I-44 to I-64



Route D (Page) - I-270 to I-170



Park-and-Ride

The table below summarizes pre-closure construction and closure construction quarterly parking counts at MoDOT's Park-and-Ride lots in St. Louis region (Missouri four county metro area). Users at regional park-and-ride lots have decrease in this quarter, but remains higher than pre-closure construction. This information might help provide an indicator on how the gas price fluctuation has impacted the region over the past year or so with gas prices down significantly.

MoDOT Park-and-Ride Volumes

County	Lots	Total spaces	Vehicles Parked in Lot						Aug08	Nov 08
			Feb07	May07	Aug07	Nov07	Feb08	May08		
Franklin	6	413	295	205	189	175	168	167	202	193
Jefferson	11	962	321	337	379	386	367	430	448	435
St. Charles	12	1110	427	403	283	315	301	415	566	455
St. Louis	6	792	519	540	582	451	493	579	697	573
Total	35	3277	1562	1485	1433	1327	1329	1591	1913	1656

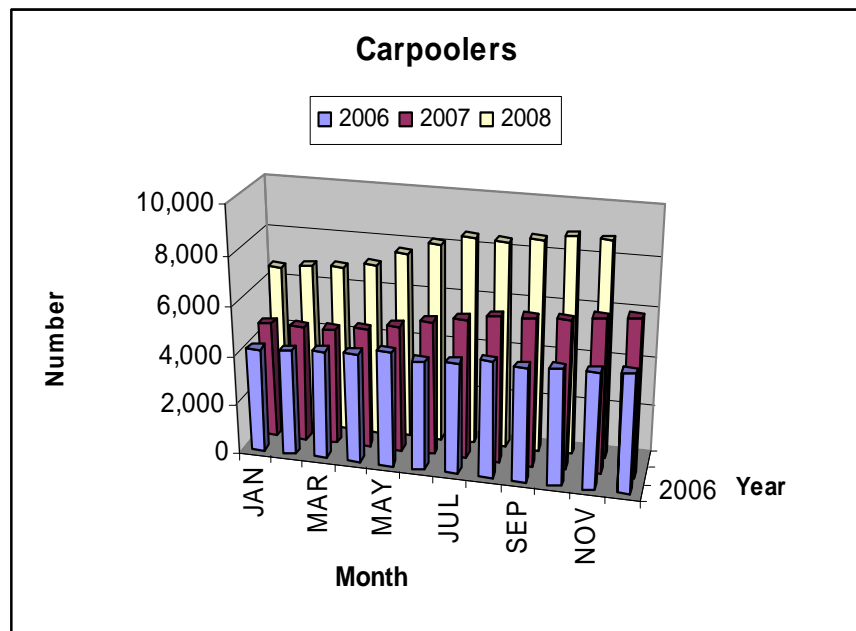
Transit

We continue to work with Metro St. Louis in determining an approach to analyze the impacts experience by the transit provider during the closure and construction along I-64. The annual report will provide a more detail assessment of transit, both bus and light rail.

Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The graph at right shows historical ridership for RideFinders, and indicates a general upward trend since 2006. The ridership has somewhat level out over the last 2 months to around 8800 carpools. This fact is also true with vanpoolers that are around 980 vanpoolers. This fact may also provide some indication of the regional impact experience with the reduction gas prices.

The research team is working with RideFinders to obtain more details to help correlate rideshare activities with I-64 closure statistics.



4. Economics

Economics Highlights

Major Components of Economic Analysis

Analysis of pre-closure, western closure, and current conditions, transitioning to the eastern closure

Determine the effectiveness of the reconstruction and traffic management strategies on the local economy

Identify the strategies that are the most appropriate for near-term and long-term

The primary highlight for this quarter is collection, analysis, and tracking of economic data and financial indicators since the western closure of I-64. To date, MERIC has provided HDR with economic data from the first quarter 2006 through the second quarter of 2008. In addition residential and commercial real estate data has been collected for the St. Louis metro area. Lastly, taxable sales data has been compiled up to and including the third-quarter of 2008. Given the time lag in available economic data indicators, this quarterly report will only focus on the currently available and

collected data up to the third quarter of 2008.

Economic Analysis Progress

Current activities to date include:

- Collection of the identified published economic, demographic, and fiscal data.
- Analysis of real estate data for the St. Louis metro and comparison to other metro areas
- Received ZIP-code-level data from MERIC for the first and second quarters of 2008. The economic data includes: industry employment, wage, and establishment data tabulations.
- Analysis of Third Quarter 2008 Taxable Sales Data from Missouri Department of Revenue (DOR)
- Finalizing, distributing, and publicizing the fall 2008 business survey

Real Estate

The office vacancy rates in the St. Louis metropolitan area have increased since the second quarter of 2007 to 14.57% and average office lease rates have fallen to \$18.39 per square foot. St. Louis ranks 25th in terms of its office vacancy rate compared to the major metropolitan areas in the US¹. As for residential housing, the number of building permits for single-family housing in the St. Louis metro has fallen, consistent with national trends, while multifamily housing permits have declined by 60% since the same period in 2007 is significant higher than the national trends.

Table 1 Housing Building Permits, in thousands²

	SINGLE-FAMILY			MULTIFAMILY		
	YTD Jul-08	YTD Jul-07	YTD PCT CHG	YTD Jul-08	YTD Jul-07	YTD PCT CHG
UNITED STATES	387.4	651.9	-41%	216.9	238.5	-9%
St. Louis Metro	3.19	5.42	-41%	0.63	1.57	-60%

¹ CB Richard Ellis

² National Association of Homebuilders

Economic Analysis

Figure 1 displays an employment index for the I-64 corridor and non-corridor regions of St. Louis city and county. The graph depicts positive growth from first quarter of 2007 through the fourth quarter of 2007. Employment growth declines in the first quarter of 2008, for the corridor and fell below the first quarter 2007 employment level for the non-corridor region. These trends are consistent with taxable sales as discussed below with a slight recovery in second quarter 2008. Not surprisingly, taxable sales fluctuate to a greater degree than employment, which experiences less volatile seasonal variation.

Figure 1 Employment Index by Region



Table 2 below shows the major economic indicators for the corridor and non-corridor regions for the first two quarters of 2008. Table 2 shows that there is a modest recovery in terms of employment and total taxable sales for both regions. Despite the slight recovery in jobs and taxable sales in second quarter, there is a decline in both the number of establishments and total wages.

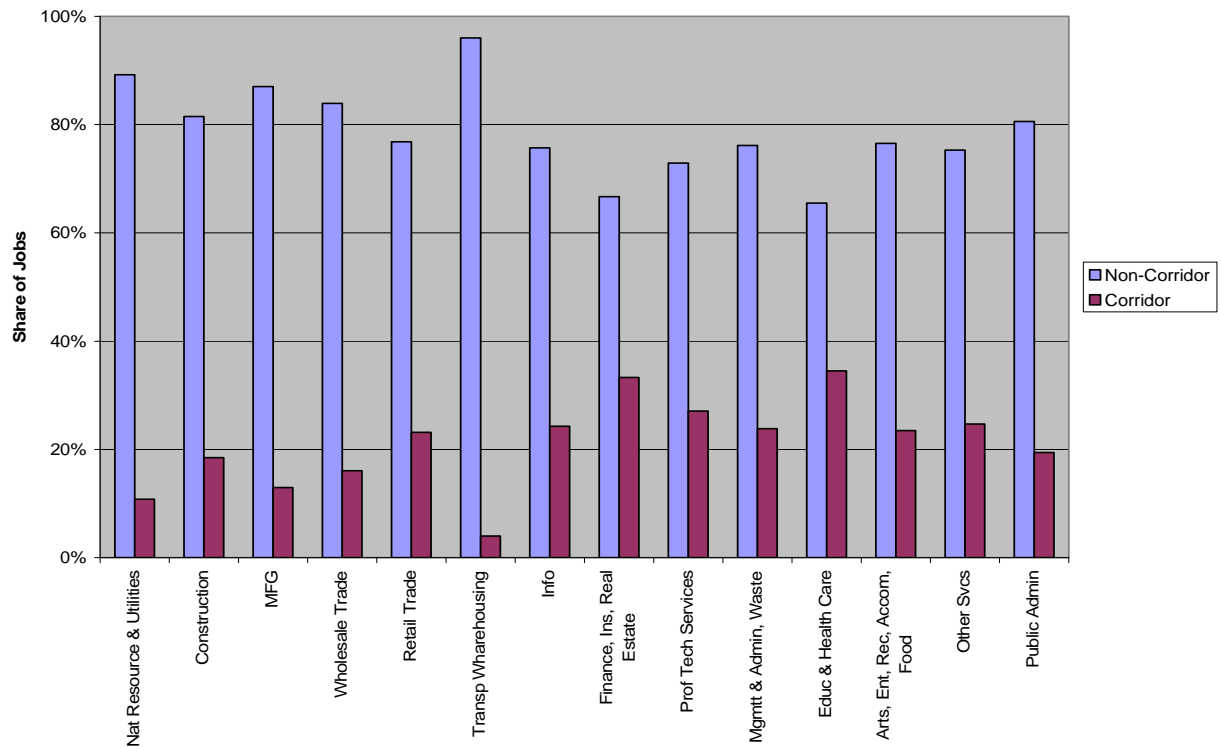
Table 2 St. Louis I-64 Corridor and Non-Corridor Economic Profile

	1st Quarter 2008		2nd Quarter 2008		3rd Quarter 2008	
	Corridor	Non-Corridor	Corridor	Non-Corridor	Corridor	Non-Corridor
Jobs	200,772	616,400	201,577	631,271	N/A	N/A
Number of Establishments	9,232	31,155	9,197	31,131	N/A	N/A
Wages (\$ Millions)	\$ 2,705	\$ 7,413	\$ 2,555	\$ 7,193	N/A	N/A
Total Taxable Sales (\$ Millions)	\$ 833	\$ 3,977	\$ 914	\$ 4,226	\$ 888	\$ 4,096

Source: MERIC and Missouri Department of Revenue

Figure 2 shows the share of employment by industry for each region in second quarter 2008, where the corridor region has a significant share of jobs in education and health care, finance, insurance and real estate, and professional technical services.

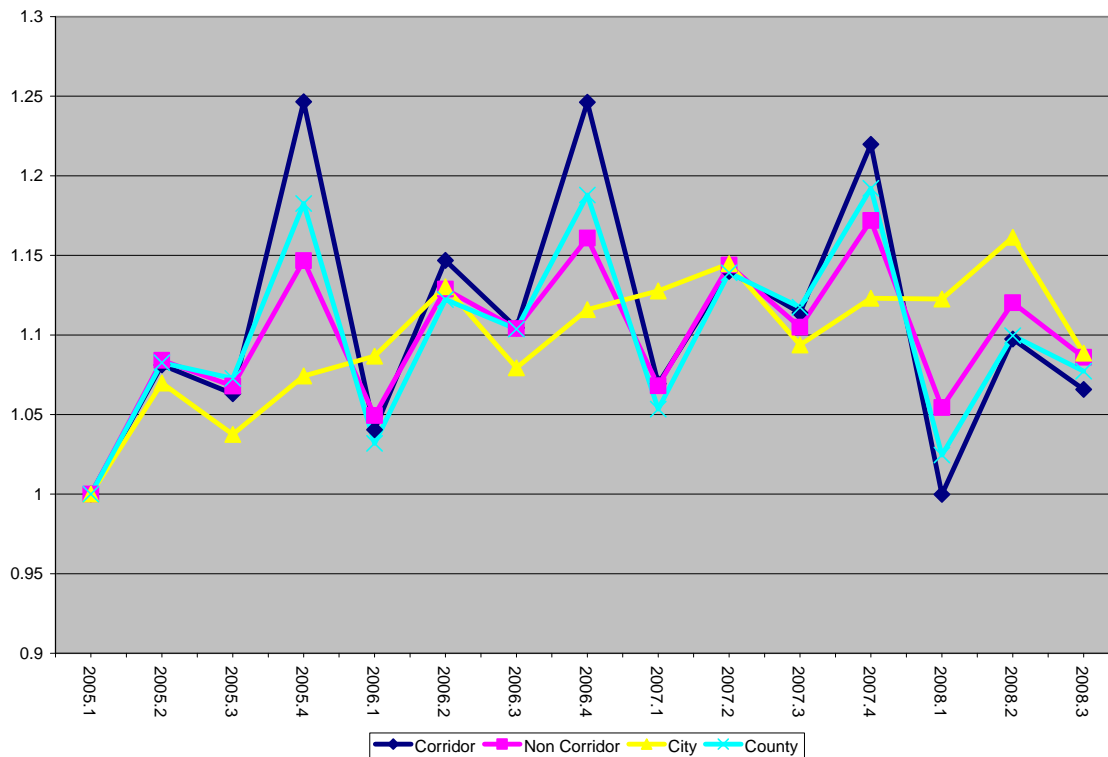
Figure 2 Employment by Industry Share: Corridor and Non-corridor Regions for Second Quarter 2008



Taxable Sales

The graph (Figure 3) below is an index of quarterly taxable sales for: 1) St. Louis County; 2) City of St. Louis; 3) I-64 Corridor region; and 4) Non-corridor areas of the City and County. Taxable sales declined for the first quarter of 2008 for all four geographic areas, but experienced a modest recovery in the second quarter of 2008. As shown in Figure 3, St. Louis City's taxable sales grew steadily from 2005 until the fourth quarter of 2007, with almost no change, or flat growth, between fourth quarter 2007 and first quarter 2008. The trend line for St. Louis County's taxable sales shows it is far more susceptible to seasonal trends, as taxable sales peak during the fourth quarter of each year.

Figure 3 Taxable Sales Index by Region



Comparing the I-64 corridor and non-corridor region, the corridor is more susceptible to seasonal spikes, especially the transition from fourth quarter to first quarter of the following year. For 2008, the corridor region saw a steeper decline in taxable sales (than in previous years) from fourth quarter 2007, but rebounded during second quarter 2008. Table 3 below shows the year-on-year differences from the first and second quarters of 2007 and 2008 for each region. On a year-on-year basis the non-corridor region experiences a significant decline in taxable sales for the second quarter (\$89 million). However, on a percentage-point basis the corridor is experiencing a more dramatic decline in sales, down 6.5% for the first quarter of 2008 and down 4.3% for the third quarter of 2008.

Table 3 Year-on-Year Difference Taxable Sales 2008 vs 2007, in millions of dollars

	2008 Vs 2007			Percentage Change		
	1st Quarter	2nd Quarter	3rd Quarter	1st Quarter	2nd Quarter	3rd Quarter
Corridor	\$ (58.01)	\$ (35.44)	\$ (39.95)	-6.5%	-3.7%	-4.3%
Non-corridor	\$ (51.24)	\$ (89.20)	\$ (71.54)	-1.3%	-2.1%	-1.7%

These results demonstrate that overall taxable sales are declining in the study area, and indicate that the corridor region is to some degree impacted by the western closure. However, as there are only three data points, which are subject to revision, it is difficult to completely attribute these impacts to I-64, especially considering the current national economic conditions.

Response

I-64 Traffic Response Highlights

Major Goals – I-64 Traffic Response Assessment

- Assess benefit/cost of the current I-64 Traffic Response deployment (arterials)
- Assess value of continuing future arterial highway service patrol efforts
- Develop white paper that provides a sustainable approach to consideration of future arterial

The main highlight for this quarter was the collection of the I-64 Traffic Response surveys. These surveys are provided during each assist performed. This survey is providing information from motorists receiving these services, including information on location, response/wait time, services provided, the professionalism with which services were provided, and the user opinion on the value of the services. Additional questions on the I-64

project were also included to help gauge users' opinions on the I-64 project and to connect these services with the I-64 project. The survey form identifies the sponsors, and provides information on the regional traveler information systems (511 and Gateway Guide). 755 surveys have been completed and received during the first eleven months for the I-64 Traffic Response with 2616 from Motorist Assist. This source of survey input represents 55% of total information received on the I-64 study. In the next quarter, the study team plans to conduct interviews with staff involved with this operation and complete study evaluation the I-64 Traffic Response team.

I-64 Traffic Response Objectives and Methods

This assessment will utilize information collected from transportation users, I-64 Traffic Response staff, previous research/study efforts, and the mobility assessment of arterial corridors to establish the benefit/cost of the program. This information will then be used to forecast the future value of continuing regional arterial highway service patrol efforts. The assessment will explore the following potential expanded arterial highway service patrol alternatives:

- Expanded services only during major or roadway closure construction activities
- Continuous services along major regional arterial corridors
- Limited-response services along major arterial corridors by expanding the region's Motorist Assist Program and the utilization of the region's integrated management and operation system

A draft white paper will be delivered by January 19, 2009 with the final white paper delivered by February 1, 2009 that will outline a sustainable approach to regional arterial highway patrol services. This deliverable will provide the region the time necessary to evaluate, determine potential funding sources and implement desired recommendations.

I-64 Traffic Response Results

MoDOT performs service patrol activities where operators travel busy highways and provide assistance at incident sites for stranded motorists and crashes. By quickly helping to resolve problems, this program increases the safety and mobility of all motorists in the area. MoDOT's Motorist Assist program concentrates on the interstates, and I-64 Traffic Response sponsored by St. Louis County covers major arterial roads such as Manchester Road and Olive Boulevard. Starting on January 2, 2008 – the day of the closure – these programs' operators began distributing surveys to those they assisted to obtain feedback about operator performance, and as another method to learn how the closure is impacting motorists.

Responses indicate that motorists are very satisfied with operator performance, and their responses related to the closure are higher than experienced in the web surveys, mail surveys and interviews. The table below summarizes some of these satisfaction measures. While limited two questions, they reflect important questions on the I-64 closure on the project delivery method and regional mobility impacts. The distribution and receipt of surveys will continue throughout the study period, with quarterly updates being made.

Percent Respondents Expressing Satisfied or Very Satisfied
Motorist Assist (MA) and I-64 Traffic Response (TR) Surveys

Ability to move around St. Louis area Decision to close for 2 years vs. 6 to 8 years

	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th
MA	89%	91%	88%	90%	89%	94%	94%	94%
I-64 TR	90%	93%	93%	95%	89%	95%	93%	96%

Appendix A: Communications Data

– **Zoo Interview Report Data**

Appendix B: Mobility Data

Appendix C: Economic Data

Appendix D: Traffic Response Data

Third Quarter Interview Question Flow Sheet

Are you a Visitor or a Local Resident?

Visitor or Local (*Define local as City of St. Louis, St. Louis, St. Charles, Franklin or Jefferson County on the Missouri side or Madison, St. Clair or Monroe on the Illinois side – EWGCC Region*)

When planning your travel to the Zoo, what was your greatest concern?

Traffic, road construction, weather, gas prices, other _____

How did you enter into the Zoo area from the East or West? (*Determine - impact of closure*)

East or West

If West:

Did the I-64 closure impact your travel to the Zoo? Yes or No (If “yes” or “local” ask questions 3-7 and 10-15)
(If “no” and “visitor” asked questions for Visitor)

If East:

Are you aware of the I-64 closure west of the Zoo? Yes or No (If “yes” or “local” ask them questions 3-7 and 10-15?)
(If “no” and “visitor” asked questions for Visitor)

Local

Use Questions 3 through 7 on 1st quarter interview

Use Questions 10 through 15 on 1st quarter interview

Visitor

Did the I-64 (Hwy 40) closure affect your decision to visit the zoo?

Yes or No

Has the I-64 project deterred you from visiting the St. Louis area?

Yes or No

If yes, what areas have impacted (like Clayton, City of St. Louis, West County, etc?)

Area _____

Will knowing the about the I-64 project impact future trips to St. Louis?

Yes or No

Use question 22 (*cut list to TV, Radio, Newspaper, Internet, Road Signs, Other*)

Question 22 (*same list as for local*)

Use question 23

Question 23 (*revised to record city and state?*)

Now please tell us if you strongly agree, just agree, disagree, or strongly disagree with the following statements.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
3. The closure has changed how often I travel to certain areas					
4. The closure has changed how often I travel overall					
5. The closure has caused me to combine my trips more often					
6. The closure has changed where I spend my money					
7. The closure has changed my work schedule, location, or habits					

How satisfied are you with ...	Very Satisfied	Satisfied	No Opinion	Dissatisfied	Very Dissatisfied
10. How well the public has been kept informed about the New I-64 Project?					
11. The timeliness of information on the project?					
12. How alternative travel options have been communicated?					
13. How well you are able to move around the St. Louis area with the closure of I-64 / Highway 40?					
14. The decision to complete the work by closing I-64 for 2 years with cost savings instead of taking 6-8 years with lane closures?					
15. Your overall level of satisfaction with how the I-64 closure has been handled?					

22. **What is the best way for MoDOT to get information to you about road improvements and other road and bridge information?**

Media	<input type="checkbox"/> TV News <input type="checkbox"/> Radio <input type="checkbox"/> Newspapers
Electronic	<input type="checkbox"/> Internet Sites (list specific sites if give) _____
Roadway	<input type="checkbox"/> Road Signs <input type="checkbox"/> Dynamic (variable) message signs
Other	<input type="checkbox"/> Other: _____

In order to make sure we get adequate geographic representation and because we are interested in traffic flows, it would be very helpful if you could provide us with your home zip code and your work or school zip code.

23. _____ home zip code 24. _____ work / school zip code (Local)

23. _____ City and _____ State (Visitor)

Provide information on the Hampton closure on September 22, 2008 –

"Are you aware the Hampton I-64 interchange is closing Sept 22 from 8 months?"

Your interviewers can tell people there are 9 other entrances to Forest Park and they should become familiar with how to get there.

Specifically zoo traffic should consider I-64 to Kingshighway to Oakland to Tamm.

If they would like to provide additional comments and information direct them to the web link to the online survey

(<http://www.thenewi64.org/>)

End of Questions for the interviewee

Have interviewer determine sex, age range and ethnicity - record information along with time of day.

Observer's Opinion (Do Not Ask – interviewer to fill out)

28. ☐ **Male** ☐ **Female**

29. **Age group**

☐ 15 to 25 ☐ 26 to 40 ☐ 41 to 65 ☐ Over 65

30. **Ethnicity**

<input type="checkbox"/> American Indian	<input type="checkbox"/> Hispanic or Latino
<input type="checkbox"/> Asian	<input type="checkbox"/> White or Caucasian
<input type="checkbox"/> Black or African-American	<input type="checkbox"/> Other

Thank you for your help with completing this survey!

The New I-64 Economic and Regional Mobility Study

Third Quarter Interview
St. Louis Zoo

September 20, 2008

HDR

Before the Closure

Please indicate how much time it takes you to make certain trips now compared to how long it took you before the closure.

	Not at all (same as before)	1 to 5 minutes longer	6 to 15 minutes longer	16 to 30 minutes longer	More than 30 minutes longer
Visitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business and industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Emergencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trucking (except for local trucking company)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trucking (throughout St. Louis Region)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1. Introduction, Approach and Survey Instrument

As part of the overall evaluation study of the I-64 Project, HDR and EDSI conducted interview surveys at the St. Louis Zoo's entrances on September 20, 2008. A survey questionnaire was developed and used to gain further in-sight on the opinions regarding the I-64 construction from people attending the zoo. The questions and the public responses are discussed in more detail in this report.

A total of 80 people agreed to be interviewed as they entered or exited the zoo by both the South and North entrances. For reference a copy of the survey questionnaire is provided in the Appendix.

2. Results

Visitor of Local

Knowing whether the zoo patrons were visitors or locals provided some information on how informed the patrons were on the I-64 construction project. There were **56 local and 24 visitor** patrons interviewed.

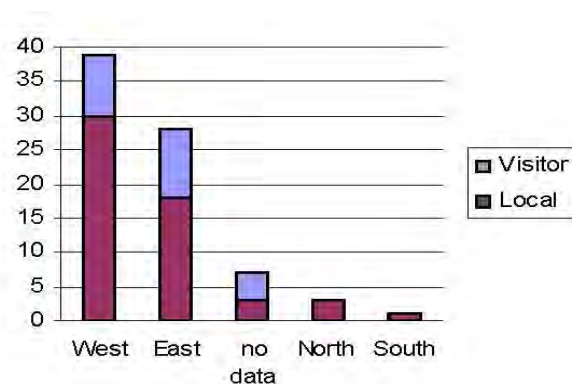
What was the greatest concern when planning the trip to the Zoo?

Weather and traffic received the greatest responses when asked this question. 'Other' responses ranging from no concerns to crowds to getting lost were received. Road construction was fourth with gas being fifth. The gas concern was included to help determine the potential impact from higher gas prices on patrons' travel decisions.



Graph 1 – Trip Planning Concerns

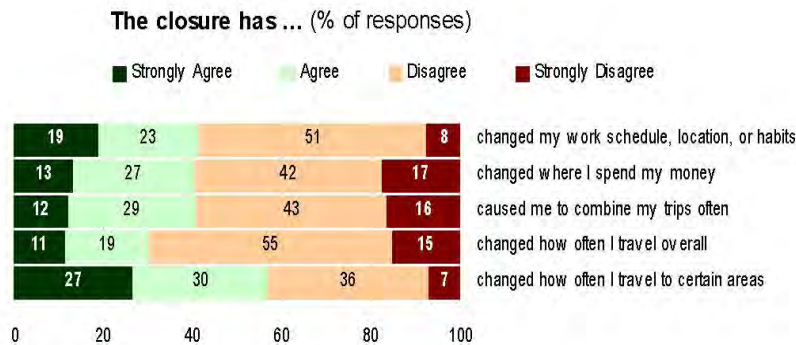
How did they arrive at the Zoo from the West or East?



This graph shows how patrons arrived when driving to the Zoo. Thirty-nine arrived from the west and twenty-eight arrived from the east. This information will help in assessing those patrons who could have experienced the road closure located west of I-170. This information allowed the survey interview to vary in a "tree format" thereby asking only pertinent questions based on whether they were local or visitor and if they arrived from the west (potentially impacted from the closure). Based on these responses, the following summary of information was prepared.

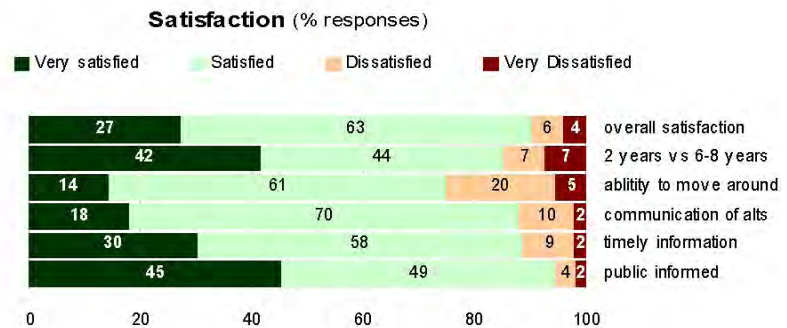
Graph 2 – Arrival Direction to the Zoo

Local Responses – Zoo Interviews

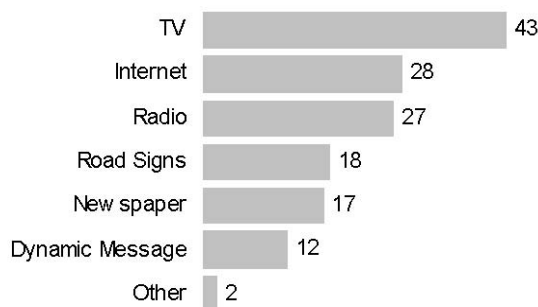


Graph 3 – Impacts of Closure

Responses to the satisfaction questions are similar to the responses in other surveys. Overall project satisfaction and project delivery in 2 years compared to 6 to 8 years are 90% and 86% respectively. Communication of alternate routes, timely project information and public informed were 88%, 89% and 94%.



Graph 4 – I-64 Project Satisfaction



Graph 5 – Project Information Dissemination

The response to the best way for MoDOT to disseminate information on the I-64 project was slightly different than the other surveys. The primary difference is the television media received more responses as the preferred method of delivery. In the previous surveys, television, internet and radio were more closely related as the top sources. Again, we will need to see if this response is received in future interviews at recreational destinations.



Residential Location Response



Work Location Response

Figure 1: Local Zoo Patrons - Residence and Work Location

Zip code information was obtained from 68 patrons with 19 (28%) outside the local zip code range. The information above shows residential and work location zip codes for those patrons living in the St. Louis area. Residential zip code was asked of all patrons and only local patrons were asked about their work location. A general note some participants chose not to response to certain questions.

Visitor Responses – Zoo Interviews

Visitors were asked less detailed I-64 closure impact questions and focused more about traveling to St. Louis for recreational or tourist activities. The responses are shown in Graph 6. While some patrons did indicate impacts, the majority of patrons, ranging from 85% to 93%, responded that it did not impact them. We will need to compare these results to future interviews at recreational locations to determine if their responses are similar.



Graph 6 – Visitor's Reported Project Impacts

Appendix A: Zoo Interview Complete Pack Complete Response Spreadsheet